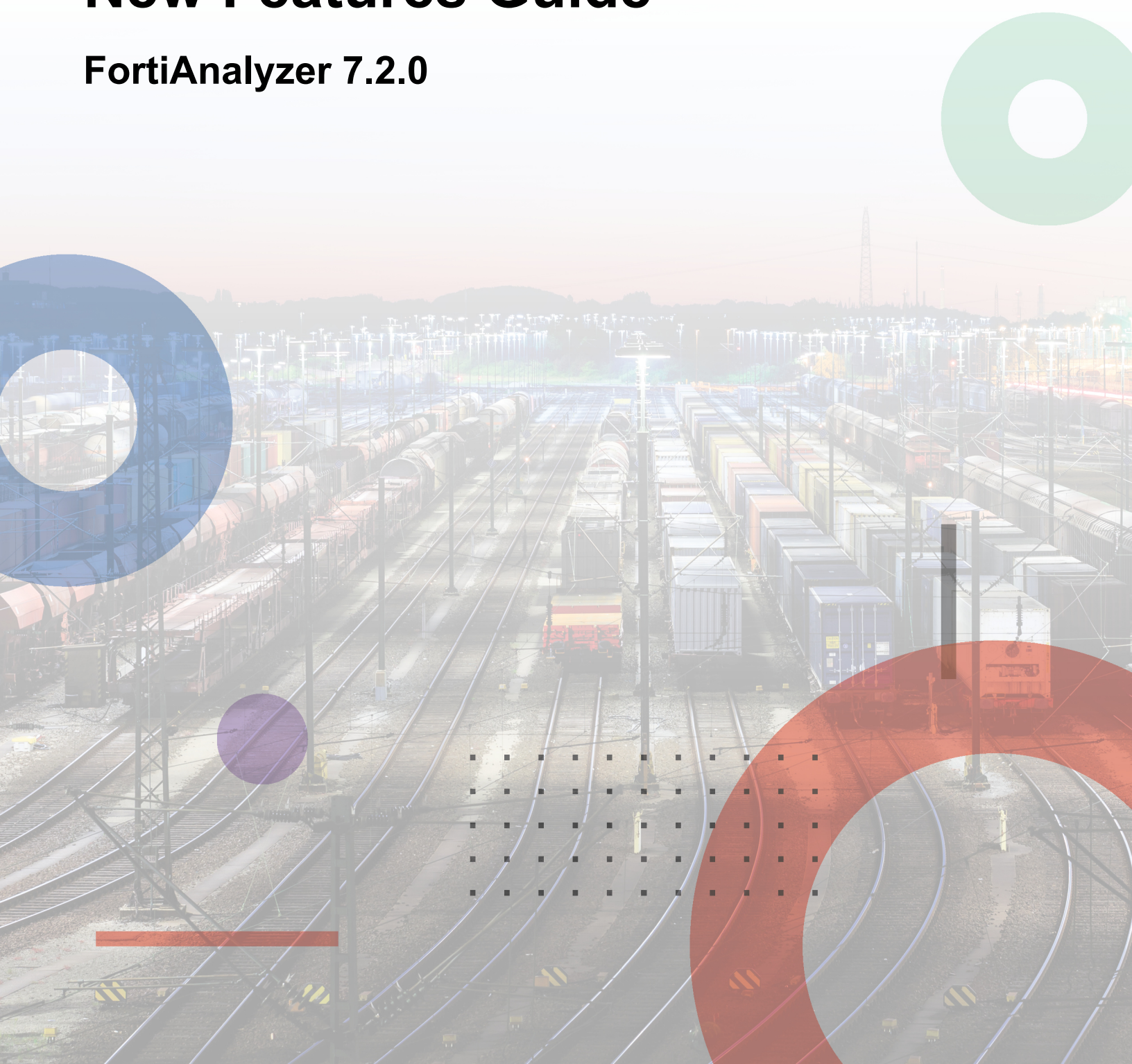
FORTINET

New Features Guide

FortiAnalyzer 7.2.0



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March 21, 2023
FortiAnalyzer 7.2.0 New Features Guide
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Change Log

Date	Change Description
2022-04-11	Initial release of FortiAnalyzer 7.2.0.
2022-04-20	Added SAML SSO wildcard admin user to match all users on IdP server on page 11.
2022-04-25	Added: • Report cache control on page 70 • Rename Outbreak Alerts Service to Outbreak Detection Service on page 55 • FortiAnalyzer Fabric usability improvements on page 105
2022-05-06	Added: • Add ZTNA dashboard to FortiView on page 46 • Include IOC detected on FortiGate local traffic in FortiAnalyzer IOC view on page 27
2022-06-06	Added: • IoT visibility on page 49 • Upgrade report editor on page 71
2022-08-09	Initial release of FortiAnalyzer 7.2.1.
2022-08-30	Added: • FortiNDR logging and reporting enhancements 7.2.1 on page 64 • Improve data visualization for the web usage report on page 74 • VPN report update 7.2.1 on page 78
2022-08-31	Added: • Traffic shaping charts 7.2.1 on page 50 • Security events consolidated page 7.2.1 on page 66
2022-09-06	Added: • Application risk and control report update 7.2.1 on page 82 • Bandwidth and applications report update 7.2.1 on page 84 • Security events and incidents summary report update 7.2.1 on page 85 • High bandwidth application usage report update 7.2.1 on page 87 • Cyber-bullying indicators report update 7.2.1 on page 89
2022-09-20	Added: • FortiAnalyzer management from FortiGate Cloud 7.2.1 on page 111 • VM flexible shapes support for Oracle Cloud Infrastructure 7.2.1 on page 113
2022-11-08	Added CASB Apps Access widget 7.2.1 on page 53.
2023-02-02	Initial release of FortiAnalyzer 7.2.2.
2023-03-21	Added Mandatory FortiCare/FortiCloud registration 7.2.1 on page 109.

Overview

This guide provides details of new features introduced in FortiAnalyzer 7.2. For each feature, the guide provides detailed information on configuration, requirements, and limitations, as applicable.

The FortiAnalyzer new features are organized into the following categories:

- Device Manager on page 7
- Central Management on page 11
- Security Fabric on page 14
- Security Operations (SOC) on page 16
- Log and Report on page 58
- System on page 98
- Cloud Services on page 111

For a list of all features organized by the version number that they were introduced, see Index on page 117.

Device Manager

This section lists the new features added to FortiAnalyzer for the device manager:

- Device and Groups on page 7

Device and Groups

This section lists the new features added to FortiAnalyzer for devices and groups:

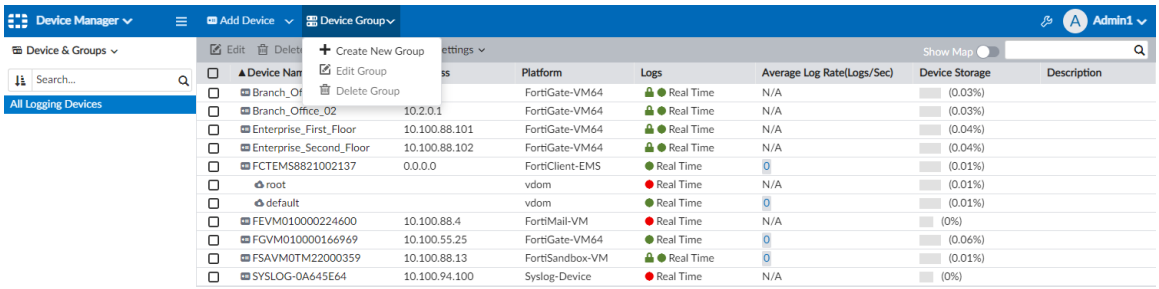
- Device Group on page 7
- Support for six major versions of FortiOS 7.2.1 on page 10

Device Group

The FortiAnalyzer admin can create a device group and add devices to the group to simplify logging device management. The device group is automatically listed as a filter in Log View, FortiView and Reports device dropdown box for selection.

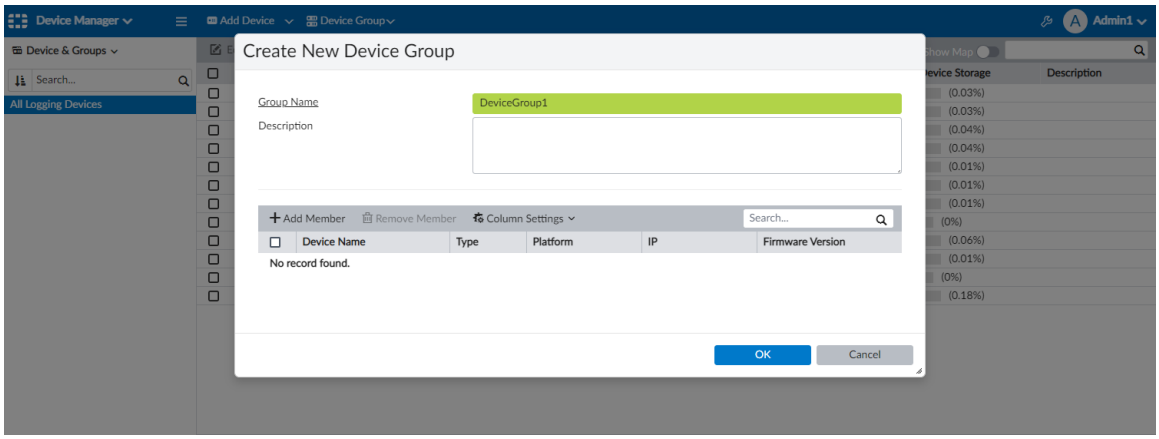
To create a device group:

1. Go to *Device Manager*.
2. From the *Device Group* dropdown, click *Create New Group*.

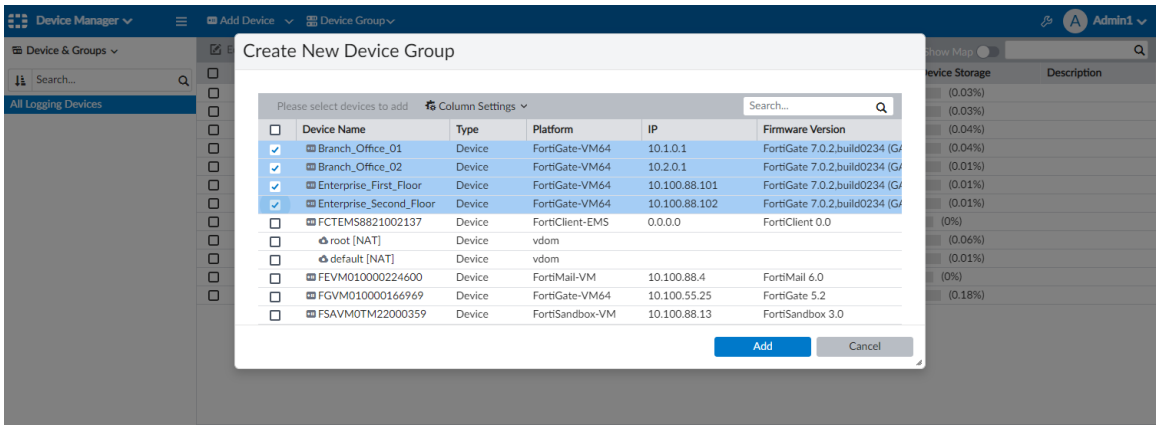


   The *Create New Device Group* dialog opens.
3. In the *Group Name* field, type a name to identify the group of devices.
   Description is optional.

4. Click *Add Member* to view a list of devices.

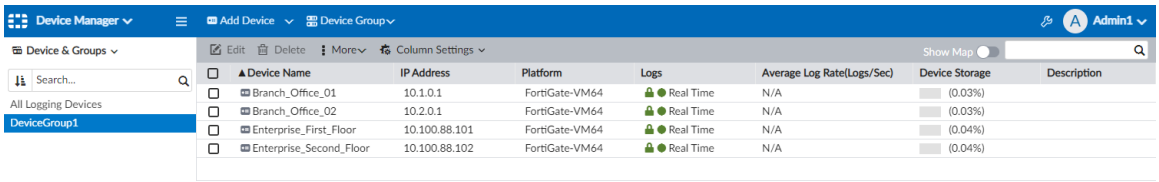


5. Select the check box for each device to add to the group, and click *Add*.



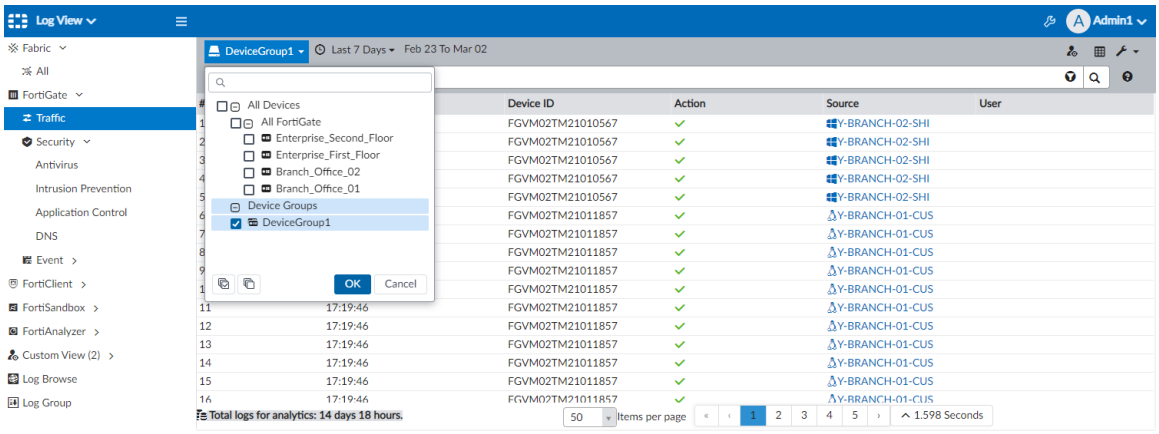
6. Click *OK*.
The device group is now available. You can right-click the device group to edit or delete it.

You cannot edit or delete the default device groups, such as the *All Logging Devices* device group.

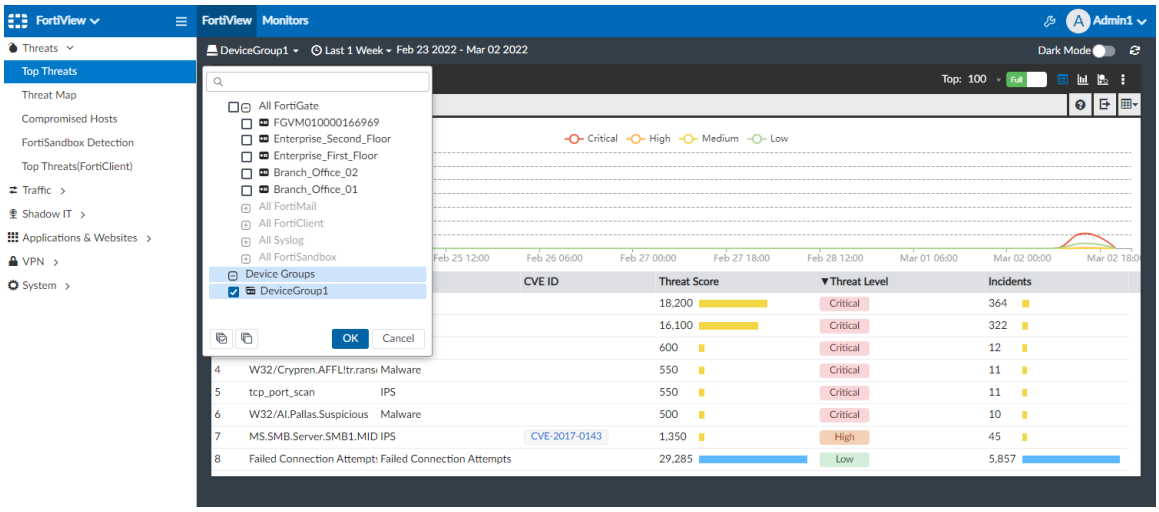


This device group can now be used in *Log View*, *FortiView*, event handlers, and *Reports*. See examples below with `DeviceGroup1` as the device group.

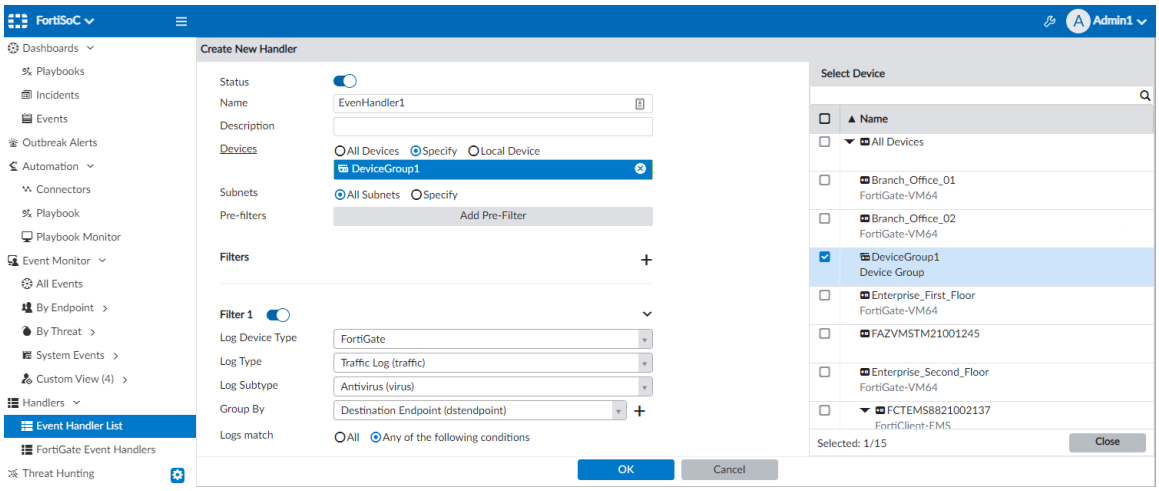
Filtering *Log View* > *FortiGate* > *Traffic* by the device group:



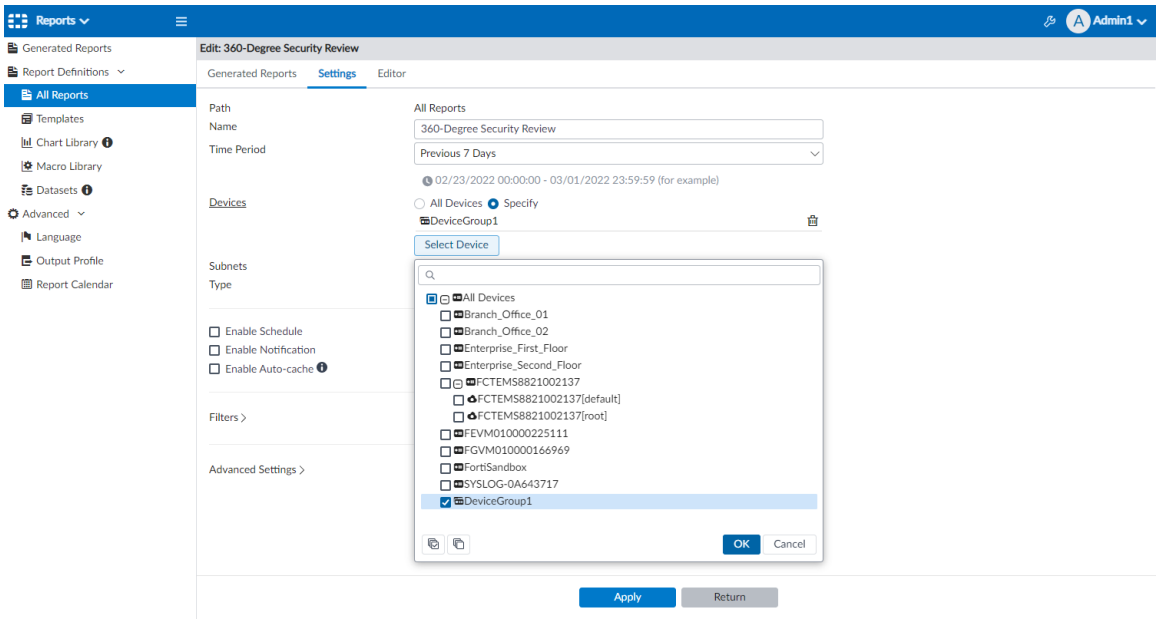
Filtering *FortiView* > *Threats* > *Top Threats* by the device group:



Using the device group for an event handler:



Using the device group in *Reports*:



Support for six major versions of FortiOS - 7.2.1

FortiAnalyzer 7.2.1 and later supports six major versions of FortiOS to let you access to all the features and enhancements of the latest FortiAnalyzer firmware without upgrading your FortiGates to later versions of FortiOS. For example, FortiAnalyzer 7.2.1 supports the following major versions of FortiOS:

- 7.2
- 7.0
- 6.4
- 6.2
- 6.0
- 5.6

For information about supported models for each major FortiOS version, see the *FortiAnalyzer 7.2.1 Release Notes*.

Central Management

This section lists the new features added to FortiAnalyzer for central management:

- Others on page 11

Others

This section lists the new features added to FortiAnalyzer for other topics relating to central management:

- SAML SSO wildcard admin user to match all users on IdP server on page 11

SAML SSO wildcard admin user to match all users on IdP server

In FortiAnalyzer 7.2.0, you can create a SAML SSO wildcard admin user to match all users on the IdP server.

In the following examples, the IdP is configured with the following local users and profiles:

- *test1* is configured with profile1 which specifies access to adom1.
- *test2* is configured with profile2 which specifies access to adom2.
- *test3* is configured with profile3 which specifies access to all ADOMs.

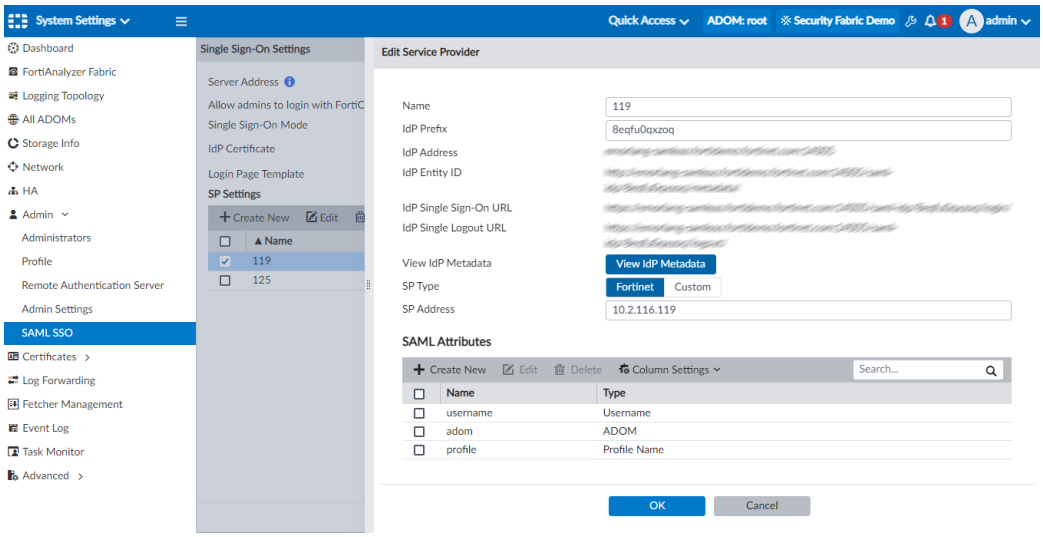
As long as the SP has the same user profile and ADOM names as the IdP, when logging in as an SSO user on the SP, the user is assigned the same profile and ADOMs.

This example assumes that you have already configured SAML SSO in your environment.

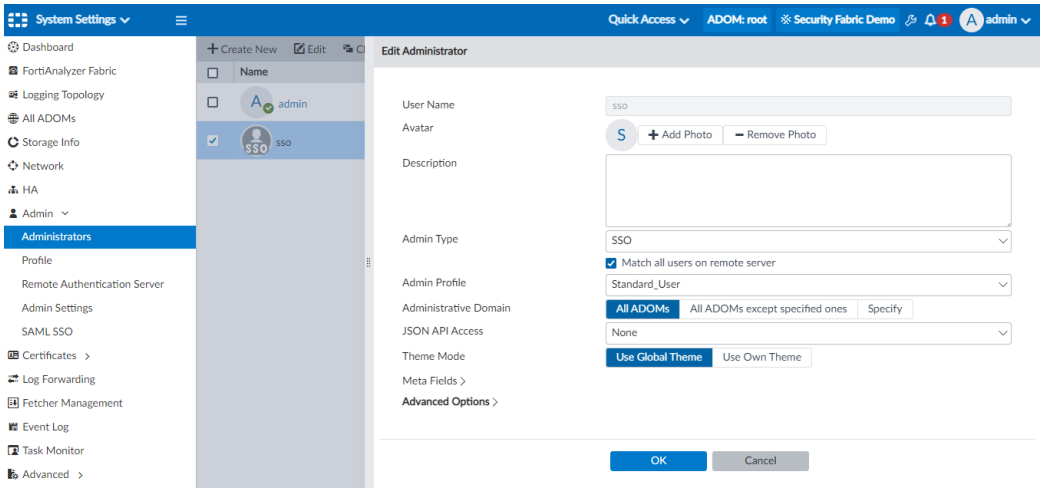
To configure a SAML wildcard user with SAML attributes:

1. On the SAML Identity Provider (IdP), click *Create New* under *SP Settings* to configure the service provider.
2. Attributes for the service provider can be added by clicking *Create New* under *SAML Attributes*.
   In this example, the following SAML attributes are used:
   - Name: username, Type: Username
   - Name: adom, Type: ADOM

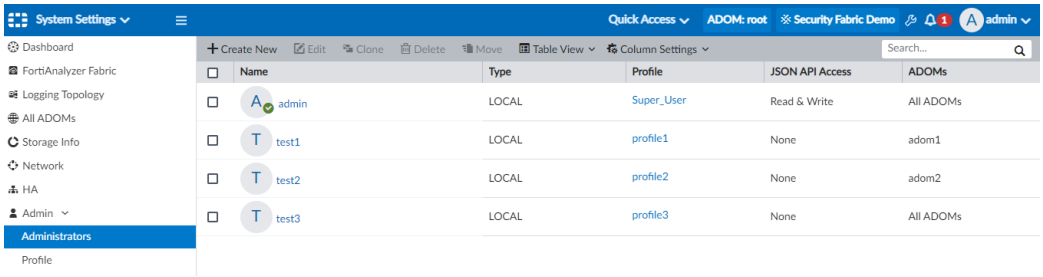
- Name: profile, Type: Profile Name



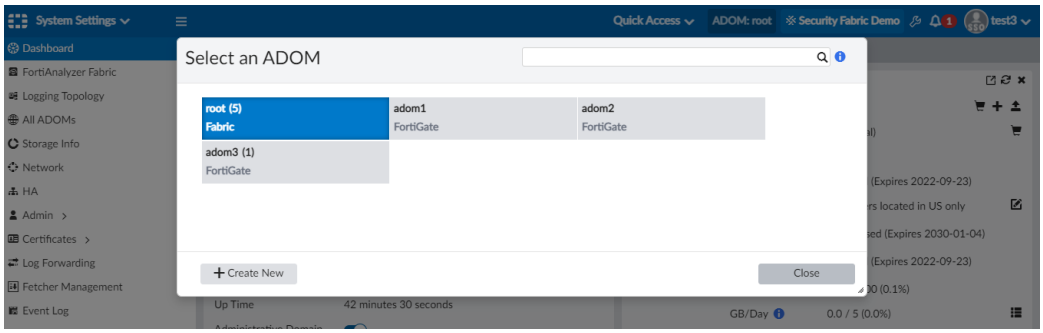
3. On the SAML Service Provider (SP), create one SAML SSO user and enable the *Match all users on remote server* option.



4. Log in to the SP as a local user created on the IdP.
For example, the local users "test1", "test2", and "test3" have been created on the IdP.



When logging on to the SP as user "test3", the account has the same ADOM access settings as are configured for local user "test3" on the IdP.


System Settings
Quick Access
ADOM: root
Security Fabric Demo
test3
Dashboard
FortiAnalyzer Fabric
Logging Topology
All ADOMs
Storage Info
Network
HA
Admin
Certificates
Log Forwarding
Fetcher Management
Event Log
Select an ADOM
root (5)
Fabric
adom1
FortiGate
adom2
FortiGate
adom3 (1)
FortiGate
Create New
Close
Up Time
42 minutes 30 seconds
GB/Day
0.0 / 5 (0.0%)

Security Fabric

This section lists the new features added to FortiAnalyzer for Security Fabric:

- Others on page 14

Others

This section lists the new features added to FortiAnalyzer for other topics relating to Security Fabric:

- OAuth 2.0 authentication for webhook connectors on page 14

OAuth 2.0 authentication for webhook connectors

OAuth 2.0 is now available for webhook connectors to provide simple, consistent, and secure authentication.

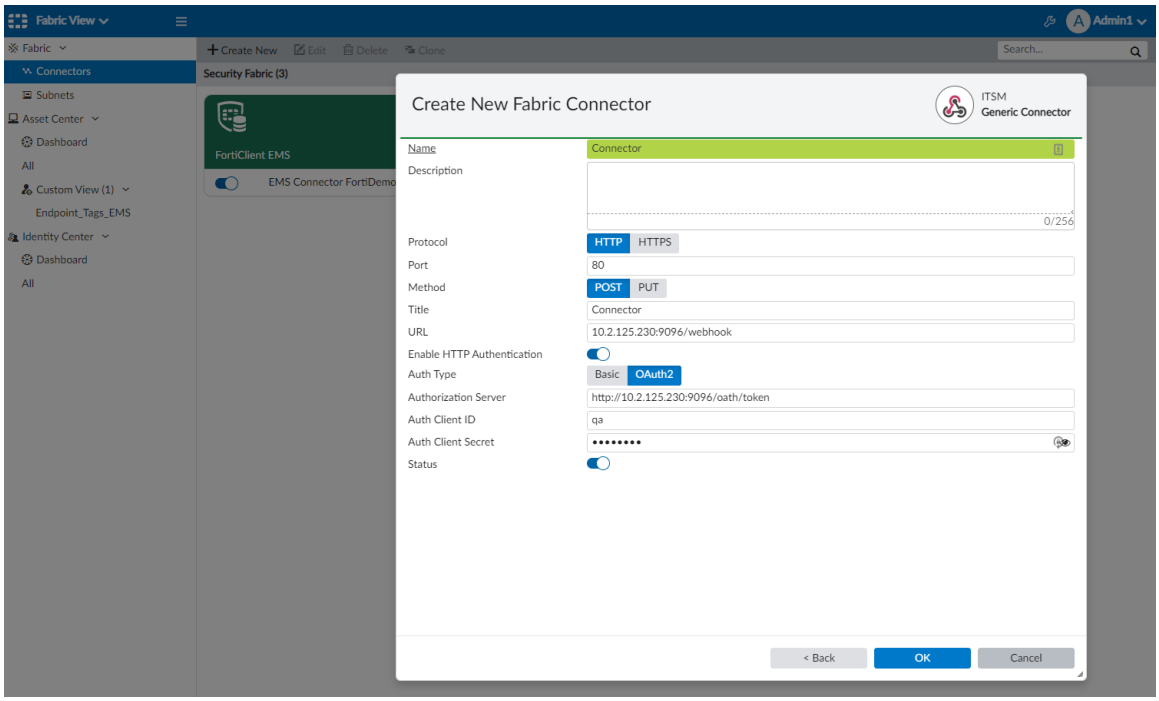
To configure OAuth 2.0 for a webhook connector:

1. Go to *Fabric View* > *Fabric* > *Connectors*, and click *Create New*.
2. Under the *ITSM* category, click *Generic Connector*.
   You can also configure OAuth 2.0 authentication for an existing webhook connector by selecting the connector and clicking *Edit*.
3. Configure the following properties:

Name	Type a name for the connector.
Description	(Optional) Type a description for the connector.
Protocol	Select the protocol FortiAnalyzer uses to communicate with the external platform.
Port	Type the port FortiAnalyzer uses to communicate with the external platform.
Method	
Title	Type a title for the connector.
URL	Type the URL of the external platform.
Enable HTTP Authentication	Set HTTP authentication to *ON*.
Auth Type	Select *OAuth2*.
Authorization Server	Type the URL of the token service. The token service must be publicly available.
Auth Client ID	Type the client ID from the token service.
Auth Client Secret	Type the client secret from the token service.

Status	Set status to *ON* to enable the fabric connector.

4. Click *OK*.
Backend OAuth 2.0 libraries in FortiAnalyzer connect to the token service and authenticate with the provided client ID and client secret. When authentication is successful, FortiAnalyzer receives a token with a TTL and scope attached to it. FortiAnalyzer will use this token for all webhook connections to the token service until TTL expires.



Security Operations (SOC)

This section lists the new features added to FortiAnalyzer for security operations (SOC):

- SOC automation on page 16
- Incident and Event Management on page 18
- Dashboards on page 39
- Others on page 55

SOC automation

This section lists the new features added to FortiAnalyzer for SOC automation:

- Use ServiceNow connector in playbooks on page 16

Use ServiceNow connector in playbooks

ServiceNow Connector is supported by playbooks for more automation with ServiceNow integration. Playbooks can automatically create, update or delete Incident records in ServiceNow via the connector.

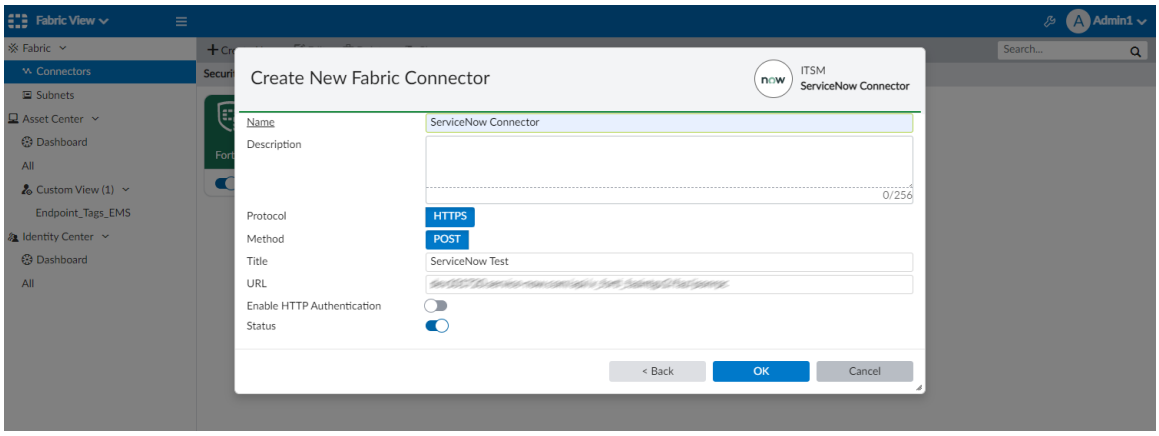
The incident trigger includes update/create/delete notices when connected to ServiceNow connector. For update notices, ServiceNow will refetch that incident to update the corresponding fields mapped to ServiceNow.

The ServiceNow instance must be running for the playbook to post incident change notices to the ServiceNow table. They will not post if the ServiceNow instance is hibernating.

To create the ServiceNow fabric connector:

1. Go to *Fabric View* > *Fabric* > *Connectors*, and click *Create New*.
2. In the *ITSM* category, click *ServiceNow Connector*.

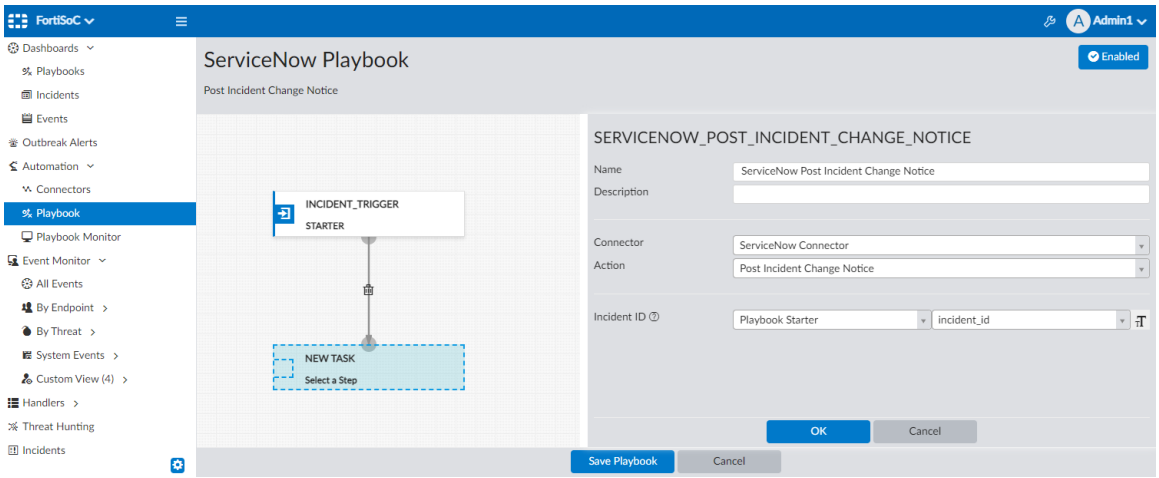
3. Configure the connector, and click *OK*.



To create a playbook using the ServiceNow fabric connector:

1. Go to *FortiSoC* > *Automation* > *Playbook*, and click *Create New*.
2. From the list of playbook templates, select *New playbook created from scratch*.
   You can also edit an existing playbook according to your needs.
3. Click within the playbook's title fields to change its name and description.
4. Select a trigger for the playbook.
5. Configure the trigger's filter conditions, and click *OK*.
6. Drag a highlighted connector from the trigger to add a new step in the playbook.
7. From the list of connectors for the step, select *ServiceNow*.
8. Configure the step in the playbook, and click *OK*.

Name	Type a name for the step.
Description	(Optional) Type a description for the step.
Connector	Select the ServiceNow connector that you configured.
Action	Select *Post Incident Change Notice*.
Incident ID	Select *Playbook Starter*, *incident_id*.



9. Click *Save Playbook*.

Incident and Event Management

This section lists the new features added to FortiAnalyzer for incident and event management:

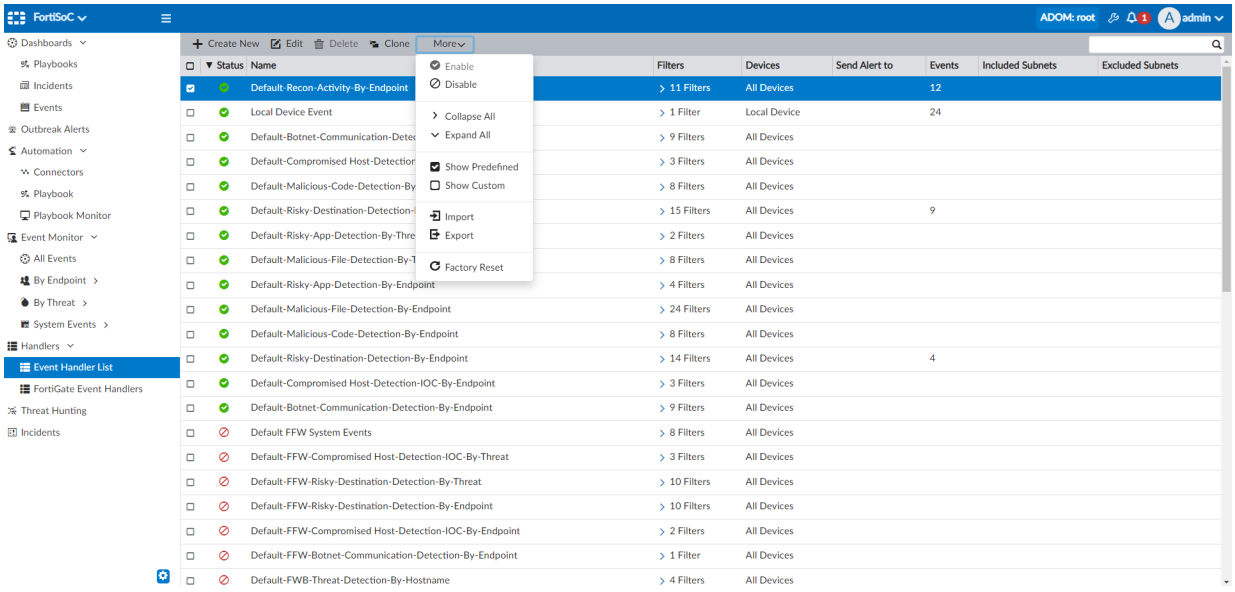
- Network reconnaissance events detection on page 18
- Shadow IT events detection on page 22
- New event handlers for NOC monitoring on page 25
- Include IOC detected on FortiGate local traffic in FortiAnalyzer IOC view on page 27
- Rule based event correlation 7.2.2 on page 28
- Data exfiltration detection 7.2.2 on page 37

Network reconnaissance events detection

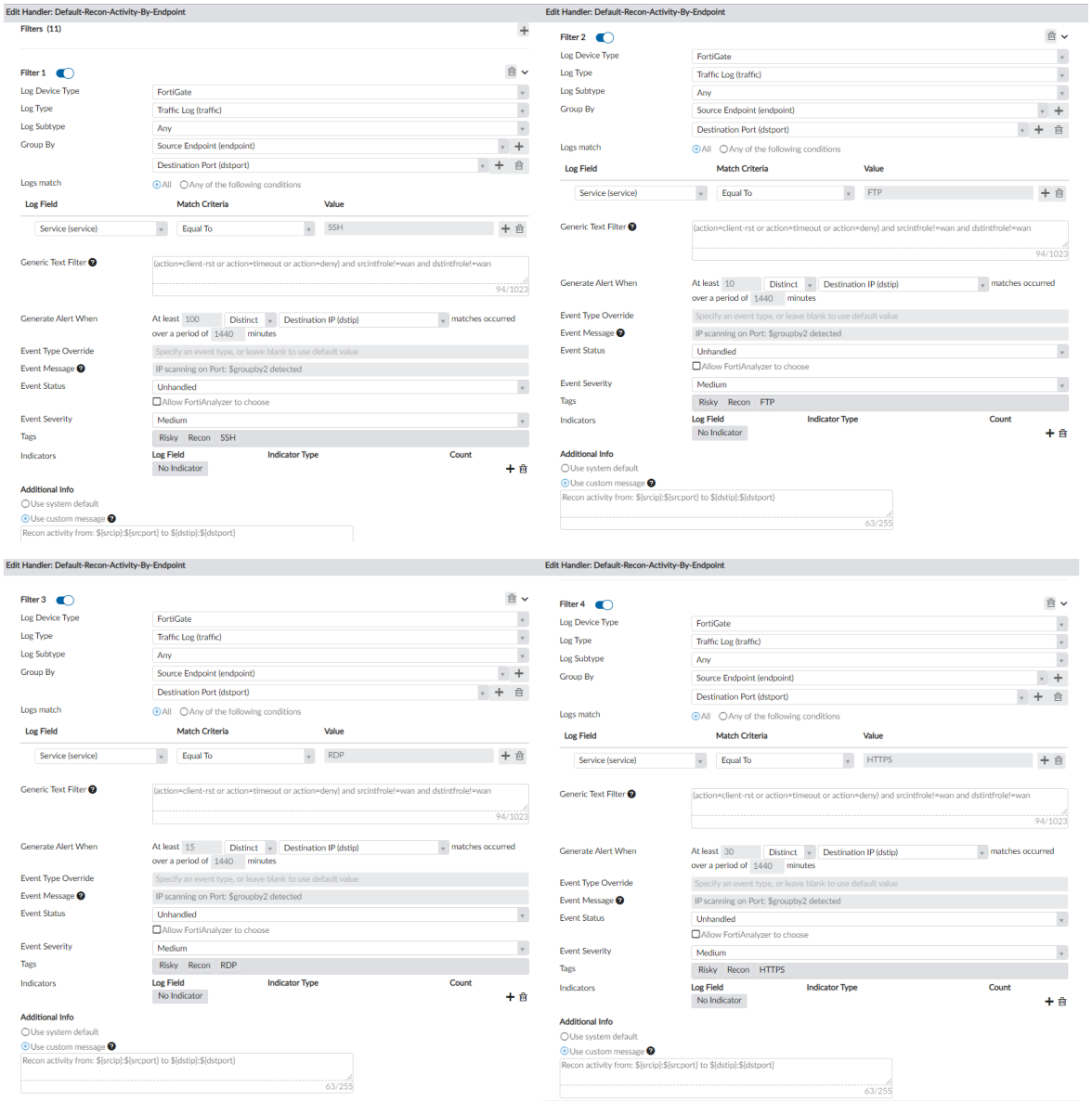
A new factory default event handler is available to detect network reconnaissance activites from attackers. This event handler has 11 filters and is enabled by default.

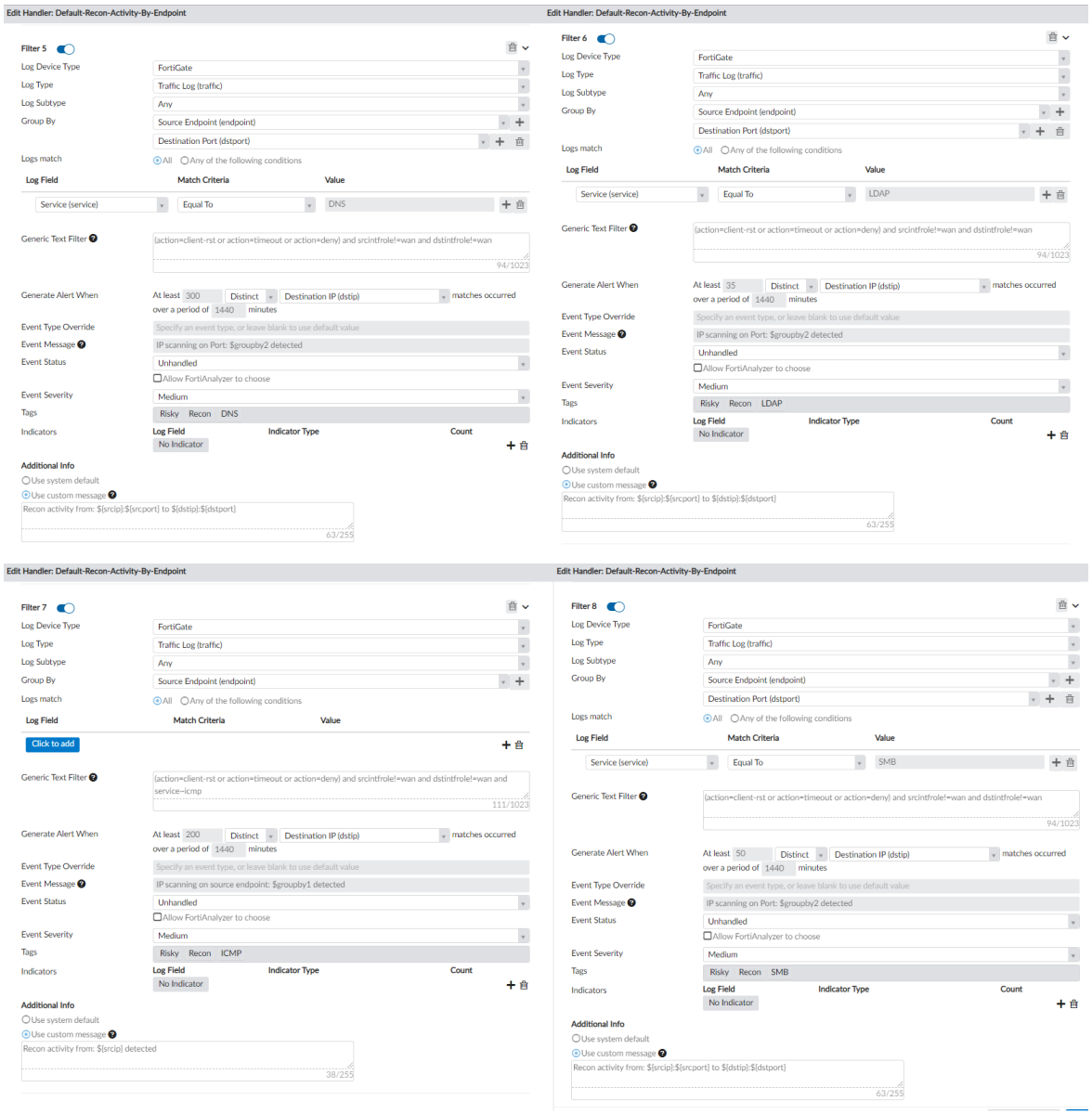
To view the network reconnaissance events handler:

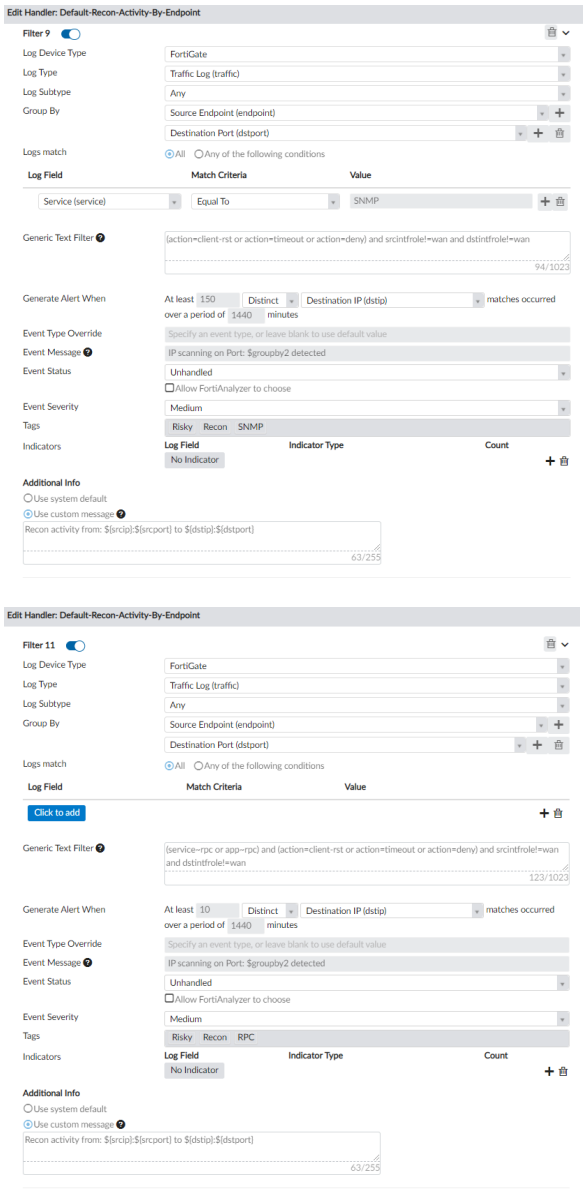
1. Go to *FortiSoC > Handlers > Event Handler List*.
   The *Default-Recon-Activity-By-Endpoint* event handler is enabled by default.

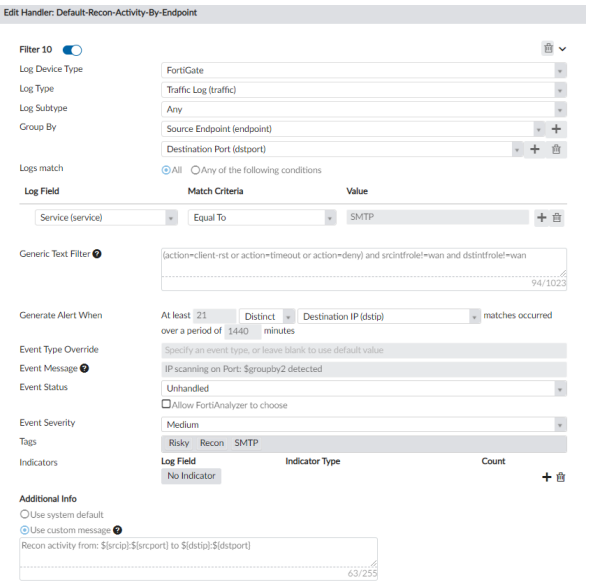


2. Double-click *Default-Recon-Activity-By-Endpoint* to view the 11 predefined filters.




Edit Handler: Default-Recon-Activity-By-Endpoint
Filter 5
Log Device Type FortiGate
Log Type Traffic Log (traffic)
Log Subtype Any
Group By Source Endpoint (endpoint)
Destination Port (dstport)
Logs match All Any of the following conditions
Log Field Match Criteria Value
Service (service) Equal To DNS
Generic Text Filter (action=client-rst or action=timeout or action=deny) and srcintfrole!=wan and dstintfrole!=wan
94/1023
Generate Alert When At least 300 Distinct Destination IP (dstip) matches occurred over a period of 1440 minutes
Event Type Override Specify an event type, or leave blank to use default value
Event Message IP scanning on Port: $groupby2 detected
Event Status Unhandled
Allow FortiAnalyzer to choose
Event Severity Medium
Tags Risky Recon DNS
Indicators Log Field Indicator Type Count
No Indicator
Additional Info
Use system default
Use custom message
Recon activity from: $(srcip):$(srcport) to $(dstip):$(dstport)
63/255
Edit Handler: Default-Recon-Activity-By-Endpoint
Filter 6
Log Device Type FortiGate
Log Type Traffic Log (traffic)
Log Subtype Any
Group By Source Endpoint (endpoint)
Destination Port (dstport)
Logs match All Any of the following conditions
Log Field Match Criteria Value
Service (service) Equal To LDAP
Generic Text Filter (action=client-rst or action=timeout or action=deny) and srcintfrole!=wan and dstintfrole!=wan
94/1023
Generate Alert When At least 35 Distinct Destination IP (dstip) matches occurred over a period of 1440 minutes
Event Type Override Specify an event type, or leave blank to use default value
Event Message IP scanning on Port: $groupby2 detected
Event Status Unhandled
Allow FortiAnalyzer to choose
Event Severity Medium
Tags Risky Recon LDAP
Indicators Log Field Indicator Type Count
No Indicator
Additional Info
Use system default
Use custom message
Recon activity from: $(srcip):$(srcport) to $(dstip):$(dstport)
63/255
Edit Handler: Default-Recon-Activity-By-Endpoint
Filter 7
Log Device Type FortiGate
Log Type Traffic Log (traffic)
Log Subtype Any
Group By Source Endpoint (endpoint)
Logs match All Any of the following conditions
Log Field Match Criteria Value
Click to add
Generic Text Filter (action=client-rst or action=timeout or action=deny) and srcintfrole!=wan and dstintfrole!=wan and service=icmp
111/1023
Generate Alert When At least 200 Distinct Destination IP (dstip) matches occurred over a period of 1440 minutes
Event Type Override Specify an event type, or leave blank to use default value
Event Message IP scanning on source endpoint: $groupby1 detected
Event Status Unhandled
Allow FortiAnalyzer to choose
Event Severity Medium
Tags Risky Recon ICMP
Indicators Log Field Indicator Type Count
No Indicator
Additional Info
Use system default
Use custom message
Recon activity from: $(srcip) detected
38/255
Edit Handler: Default-Recon-Activity-By-Endpoint
Filter 8
Log Device Type FortiGate
Log Type Traffic Log (traffic)
Log Subtype Any
Group By Source Endpoint (endpoint)
Destination Port (dstport)
Logs match All Any of the following conditions
Log Field Match Criteria Value
Service (service) Equal To SMB
Generic Text Filter (action=client-rst or action=timeout or action=deny) and srcintfrole!=wan and dstintfrole!=wan
94/1023
Generate Alert When At least 50 Distinct Destination IP (dstip) matches occurred over a period of 1440 minutes
Event Type Override Specify an event type, or leave blank to use default value
Event Message IP scanning on Port: $groupby2 detected
Event Status Unhandled
Allow FortiAnalyzer to choose
Event Severity Medium
Tags Risky Recon SMB
Indicators Log Field Indicator Type Count
No Indicator
Additional Info
Use system default
Use custom message
Recon activity from: $(srcip):$(srcport) to $(dstip):$(dstport)
63/255

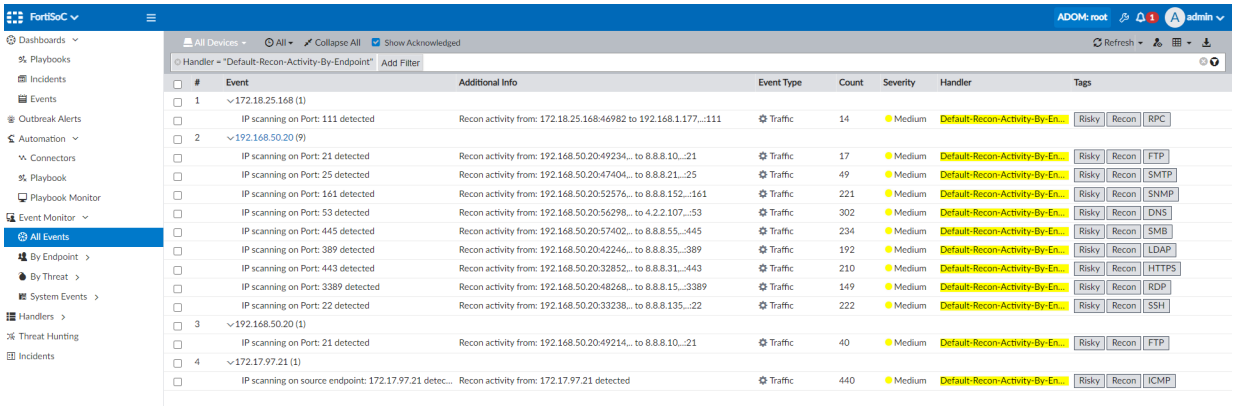

Edit Handler: Default-Recon-Activity-By-Endpoint
Filter 9
Log Device Type
FortiGate
Log Type
Traffic Log (traffic)
Log Subtype
Any
Group By
Source Endpoint (endpoint)
Destination Port (dstport)
Logs match
All
Any of the following conditions
Log Field
Match Criteria
Value
Service (service)
Equal To
SNMP
Generic Text Filter
(action=client-rst or action=timeout or action=deny) and srcintfrole!=wan and dstintfrole!=wan
94/1023
Generate Alert When
At least 150
Distinct
Destination IP (dstip)
matches occurred
over a period of 1440
minutes
Event Type Override
Specify an event type, or leave blank to use default value
Event Message
IP scanning on Port: $groupby2 detected
Event Status
Unhandled
Allow FortiAnalyzer to choose
Event Severity
Medium
Tags
Risky
Recon
SNMP
Indicators
Log Field
Indicator Type
Count
No Indicator
Additional Info
Use system default
Use custom message
Recon activity from: $(srcip):$(srcport) to $(dstip):$(dstport)
63/255


Edit Handler: Default-Recon-Activity-By-Endpoint
Filter 10
Log Device Type
FortiGate
Log Type
Traffic Log (traffic)
Log Subtype
Any
Group By
Source Endpoint (endpoint)
Destination Port (dstport)
Logs match
All
Any of the following conditions
Log Field
Match Criteria
Value
Service (service)
Equal To
SMTP
Generic Text Filter
(action=client-rst or action=timeout or action=deny) and srcintfrole!=wan and dstintfrole!=wan
94/1023
Generate Alert When
At least 21
Distinct
Destination IP (dstip)
matches occurred
over a period of 1440
minutes
Event Type Override
Specify an event type, or leave blank to use default value
Event Message
IP scanning on Port: $groupby2 detected
Event Status
Unhandled
Allow FortiAnalyzer to choose
Event Severity
Medium
Tags
Risky
Recon
SMTP
Indicators
Log Field
Indicator Type
Count
No Indicator
Additional Info
Use system default
Use custom message
Recon activity from: $(srcip):$(srcport) to $(dstip):$(dstport)
63/255

Edit Handler: Default-Recon-Activity-By-Endpoint
Filter 11
Log Device Type
FortiGate
Log Type
Traffic Log (traffic)
Log Subtype
Any
Group By
Source Endpoint (endpoint)
Destination Port (dstport)
Logs match
All
Any of the following conditions
Log Field
Match Criteria
Value
Click to add
Generic Text Filter
(service=rpc or app=rpc) and (action=client-rst or action=timeout or action=deny) and srcintfrole!=wan and dstintfrole!=wan
123/1023
Generate Alert When
At least 10
Distinct
Destination IP (dstip)
matches occurred
over a period of 1440
minutes
Event Type Override
Specify an event type, or leave blank to use default value
Event Message
IP scanning on Port: $groupby2 detected
Event Status
Unhandled
Allow FortiAnalyzer to choose
Event Severity
Medium
Tags
Risky
Recon
RPC
Indicators
Log Field
Indicator Type
Count
No Indicator
Additional Info
Use system default
Use custom message
Recon activity from: $(srcip):$(srcport) to $(dstip):$(dstport)
63/255

To view events generated by the recon activity handler:

1. Go to *FortiSoC* > *Event Monitor* > *All Events*.
2. Filter by `Handler = Default-Recon-Activity-By-Endpoint`.

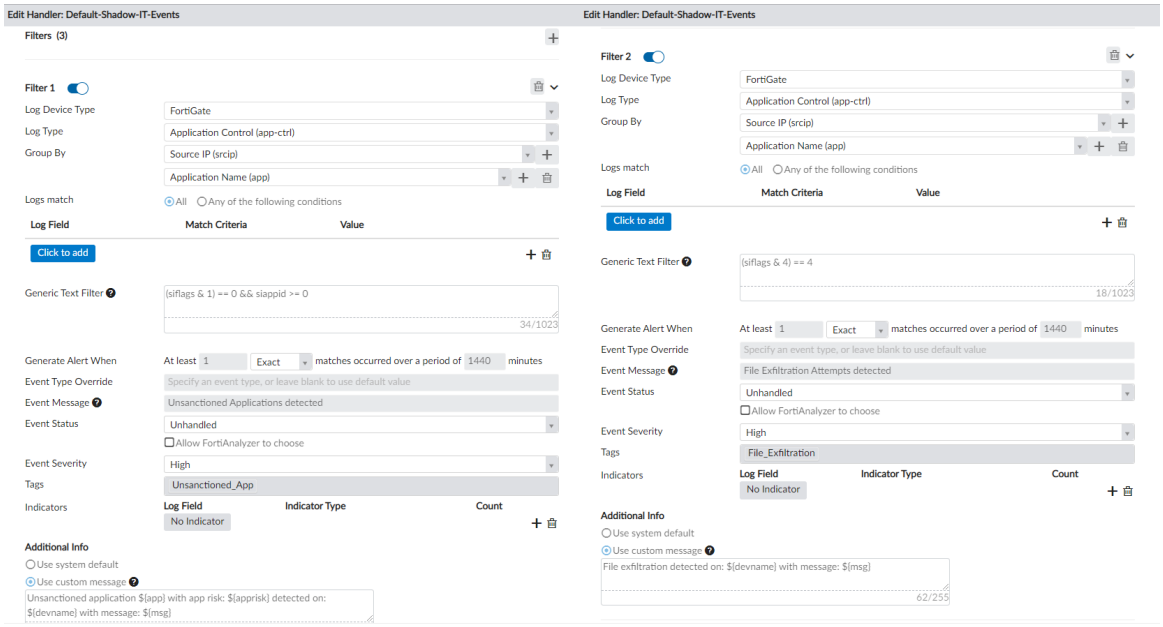


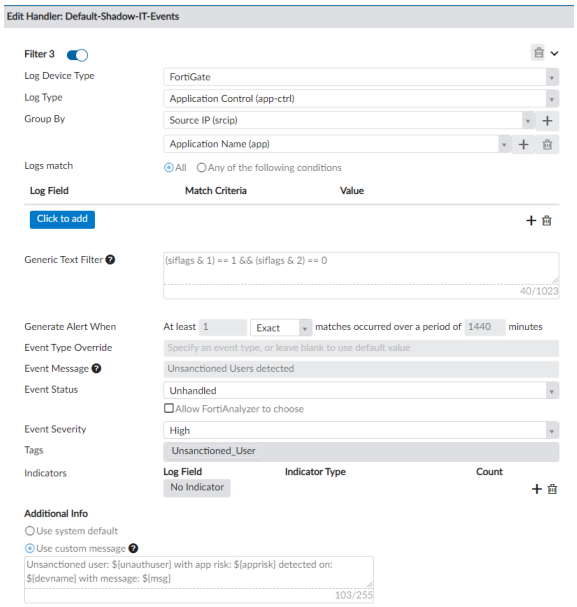
Shadow IT events detection

A new factory default event handler is available to detect shadow IT events. These events include:

- High-risk unsanctioned cloud applications
- Unsanctioned users
- File exfiltration

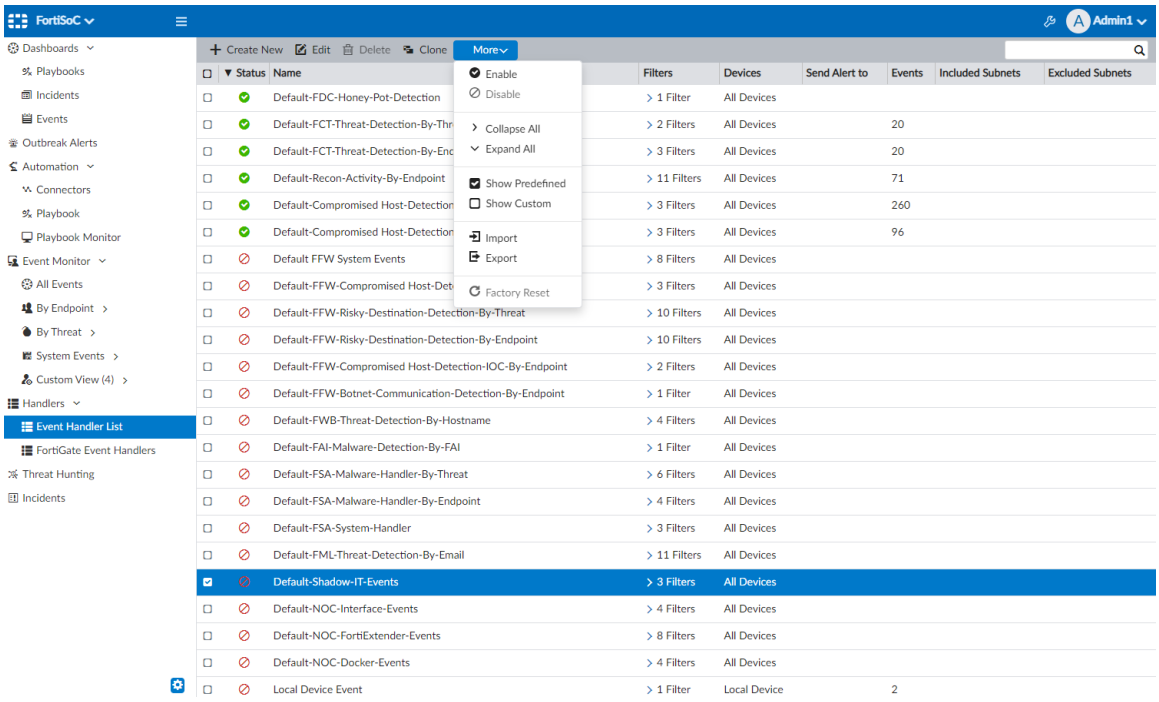
To detect these events, FortiAnalyzer must be connected with the FortiCASB connector and running the *Get Cloud Service Data (FortiCasb Connector)* playbook. FortiAnalyzer applies the meta-data of sanctioned applications and sensitive files against the application control logs. Events are generated when these incoming application control logs meet the filter criteria of the *Default-Shadow-IT-Events* event handler.





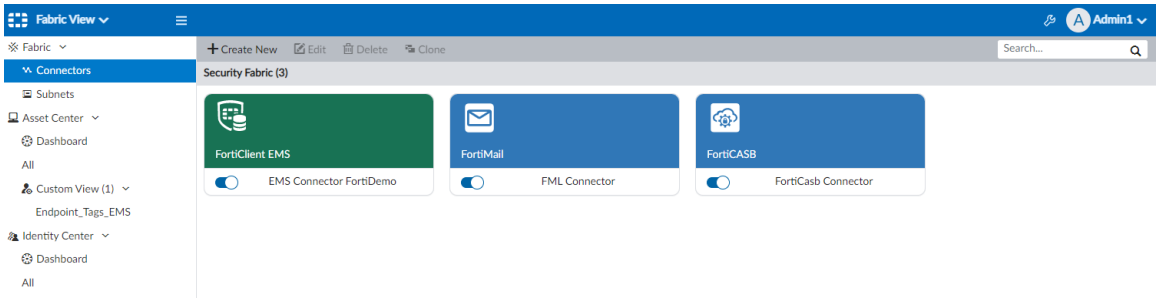
To enable the shadow IT event handler:

1. Go to *FortiSoC* > *Handlers* > *Event Handler List*.
   You can double-click the *Default-Shadow-IT-Events* event handler to view its filters.
2. Select the checkbox for *Default-Shadow-IT-Events*.
3. From the *More* dropdown, click *Enable*.

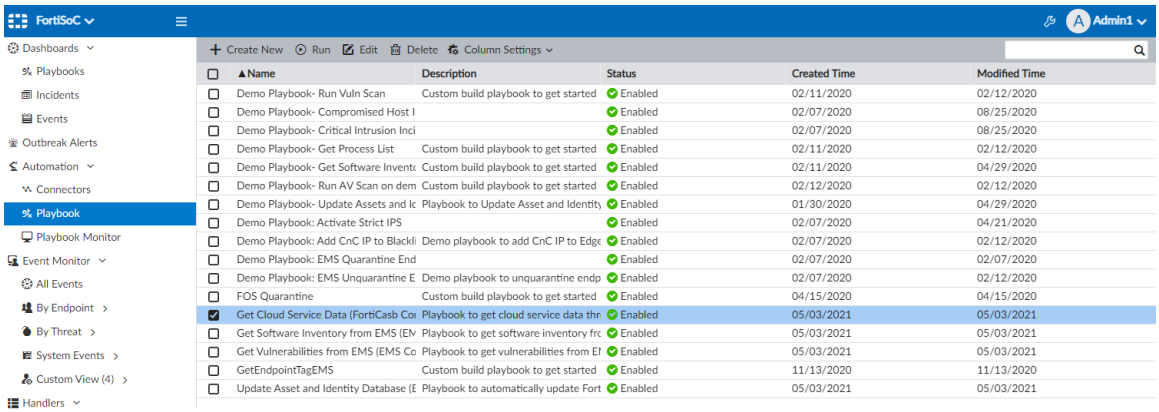


To get cloud service data from the FortiCASB connector:

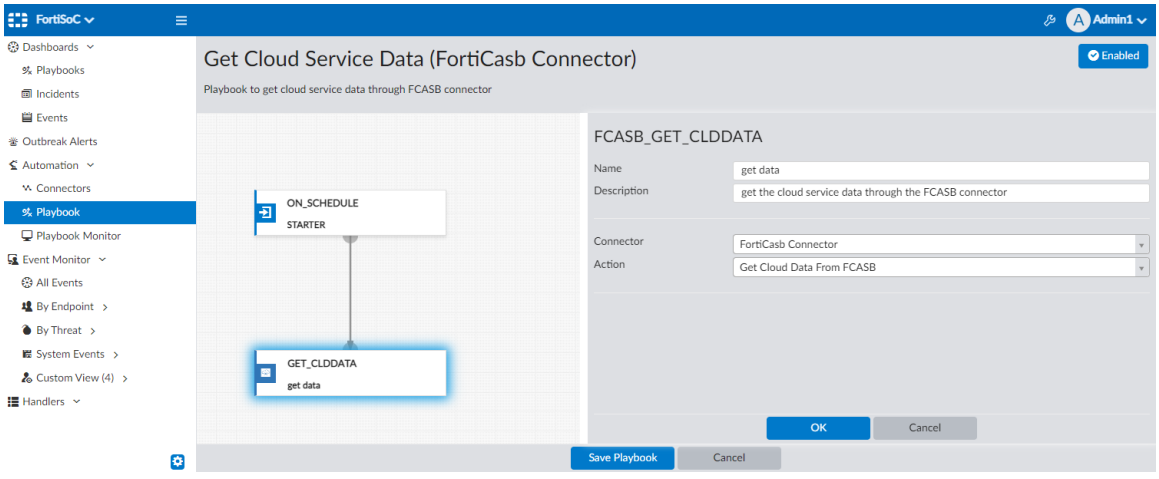
1. Go to *Fabric View* > *Connectors*.
2. Confirm there is an enabled *FortiCASB Connector*.
   If there is not an enabled *FortiCASB Connector*, click *Create New* and choose *FortiCASB* under the *Security Fabric* category. Configure the FortiCASB connector settings, and click *OK*.



3. Go to *FortiSoC* > *Automation* > *Playbook*.
4. Confirm the *Get Cloud Service Data (FortiCasb Connector)* playbook is *Enabled*.
   This playbook is automatically created when you configure a FortiCASB connector in FortiAnalyzer.

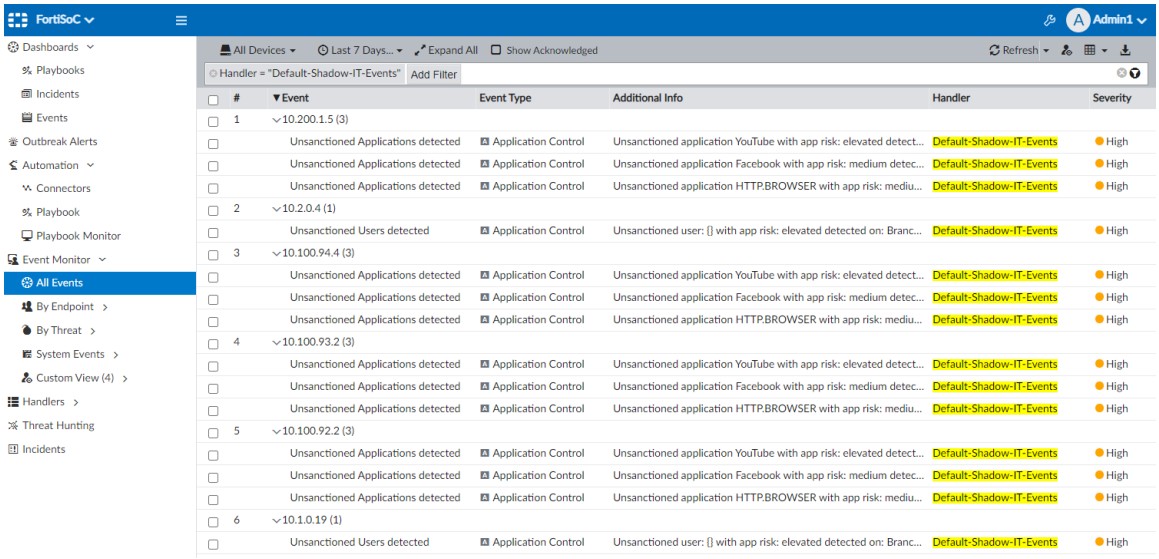


5. Double-click the *Get Cloud Service Data (FortiCasb Connector)* playbook to view its configuration.
   This playbook must get cloud service data through the FortiCASB connector for the *Default-Shadow-IT-Events* event handler to generate events.



To view events generated by the shadow IT event handler:

1. Go to *FortiSoC* > *Event Monitor* > *All Events*.
2. Filter by `Handler = Default-Shadow-IT-Events`.



New event handlers for NOC monitoring

New default event handlers are added to detect FortiGate Interface events, FortiExtender events, and FortiManager MEA CPU and Memory related alerts.

There are three new predefined NOC event handlers available in the *Event Handler List*.

- `Default-NOC-Docker-Events`
- `Default-NOC-FortiExtender-Events`
- `Default-NOC-Interface-Events`

In addition, new filters are added to four existing predefined NOC event handlers:

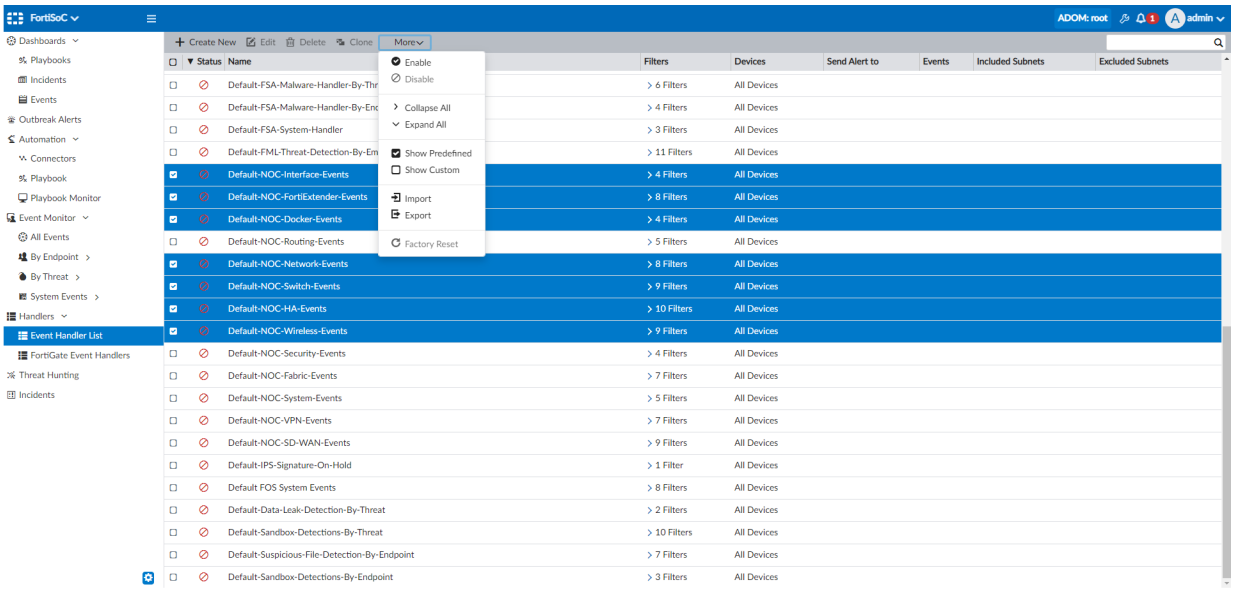
- `Default-NOC-HA-Events`
- `Default-NOC-Network-Events`
- `Default-NOC-Switch-Events`
- `Default-NOC-Wireless-Events`

All seven handlers are disabled by default and can be enabled according to need.

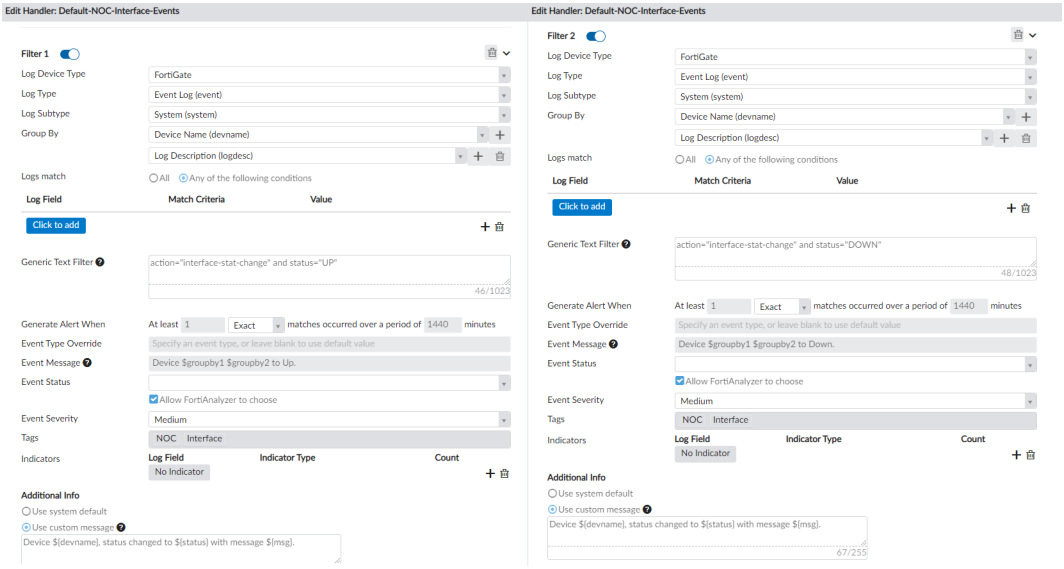
To enable NOC event handlers:

1. Go to *FortiSoC* > *Handlers* > *Event Handler List*.
2. Select the checkbox for the NOC event handler(s) that you want to enable.

3. In the toolbar, click *More* > *Enable*.

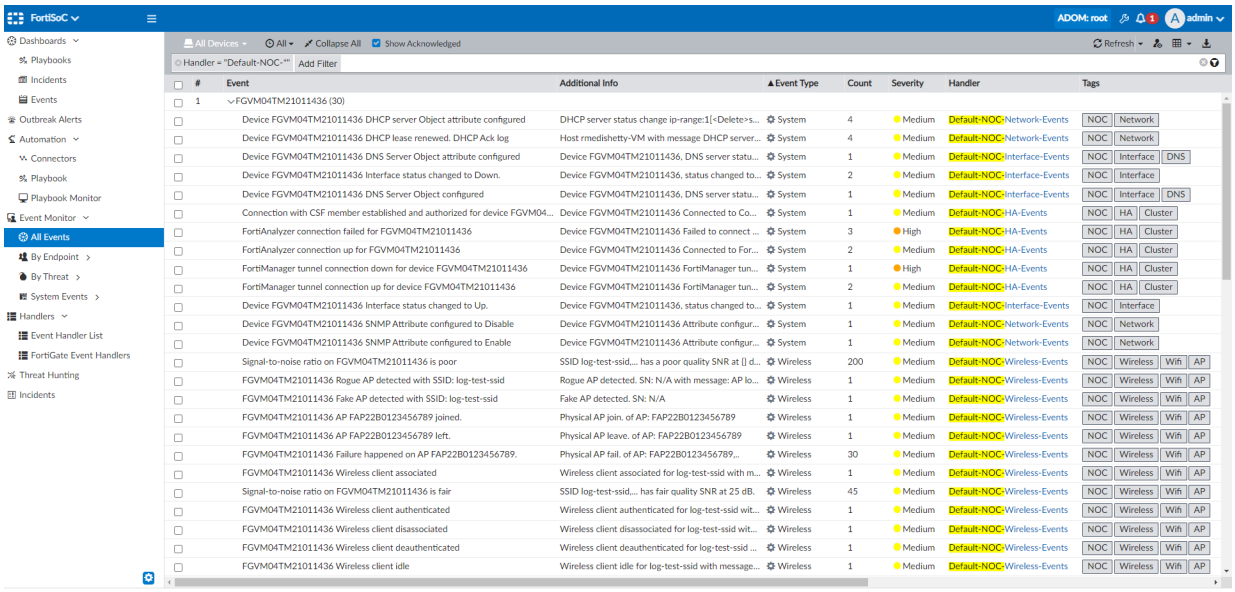


You can double-click a NOC event handler to view its filters. For example, below are two predefined filters for the *Default-NOC-Interface-Events* event handler.



To view events generated by enabled NOC event handlers:

1. Go to *FortiSoC* > *Event Monitor* > *All Events*.
2. Filter by `Handler` = a default NOC event handler. For example, `Handler = Default-NOC-Docker-Events`. Filtering by `Handler = Default-NOC-***` returns results for all enabled default NOC event handlers.

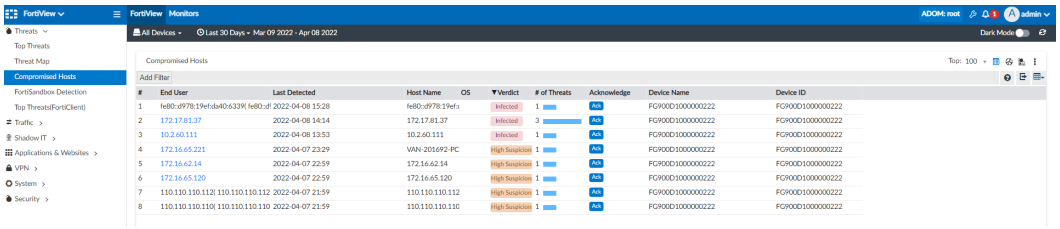


Include IOC detected on FortiGate local traffic in FortiAnalyzer IOC view

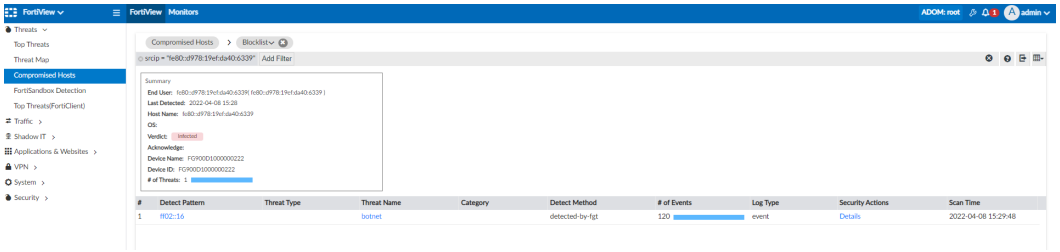
FortiGate devices generate an event log for indicators of compromise (IOC) when they are detected in local out traffic. FortiAnalyzer displays this data in *FortiView > FortiView > Threats > Compromised Hosts*.

To view IOC detected on FortiGate local traffic:

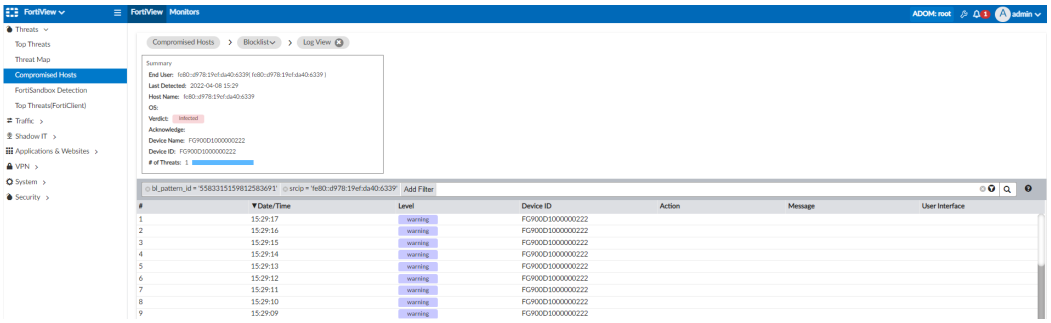
1. Go to *FortiView > FortiView > Threats > Compromised Hosts*.



2. Double-click the row for a compromised host.
   The *Threat Name = botnet* and the *Detect Pattern*= the destination IP.



3. Double-click the row for the detect pattern.
   You can review the related logs for the IOC.

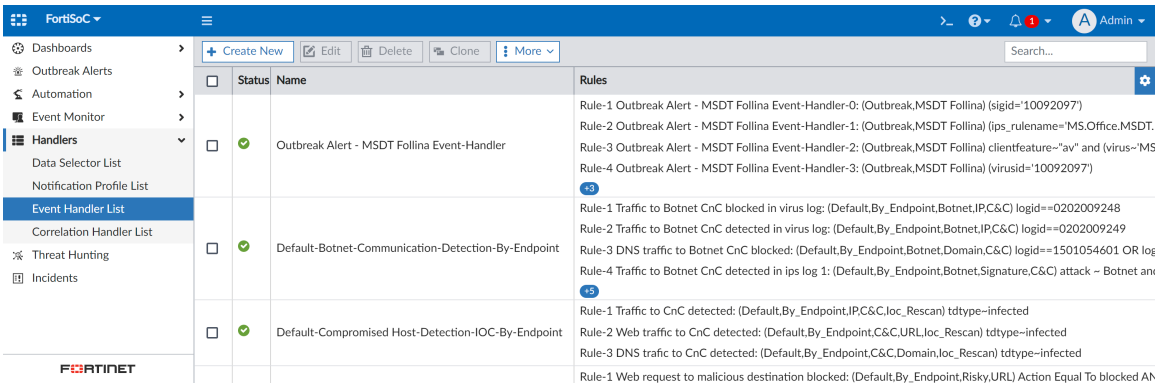


Rule based event correlation - 7.2.2

In previous versions, event handlers could only be triggered when individual filters were matched. Rule based event correlation gives extra flexibility by triggering event handlers when a *series* of rules are met.

Usability is also enhanced with the introduction of data selectors and notification profiles. You can define devices, log filters, and notification parameters that can be used across multiple event handlers without the need to re-create them individually in each event handler.

These features are configured in *FortiSoC > Handlers*. This pane now includes a *Data Selector List*, *Notification Profile List*, *Event Handler List*, and *Correlation Handler List*.



The following is available in this topic:

- Data selectors
- Notification profiles
- Event handlers
- Correlation handlers

Data selectors

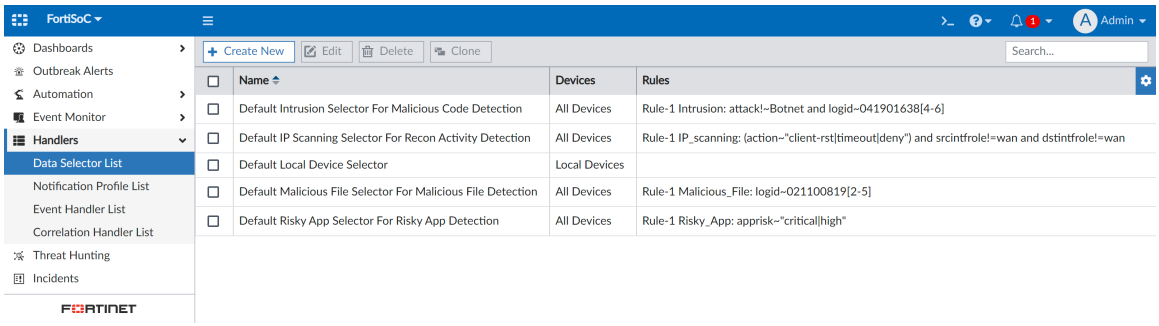
Data selectors are used to select devices, subnets, and filters (previously known as "pre-filters") for event handlers. You can create, edit, clone, and delete data selectors in *FortiSoC > Handlers > Data Selector List*.

There are five default data selectors:

- *Default Intrusion Selector For Malicious Code Detection*
- *Default IP Scanning Selector For Recon Activity Detection*
- *Default Local Device Selector*

- *Default Malicious File Selector For Malicious File Detection*
- *Default Risky App Selector for Risky App Detection*

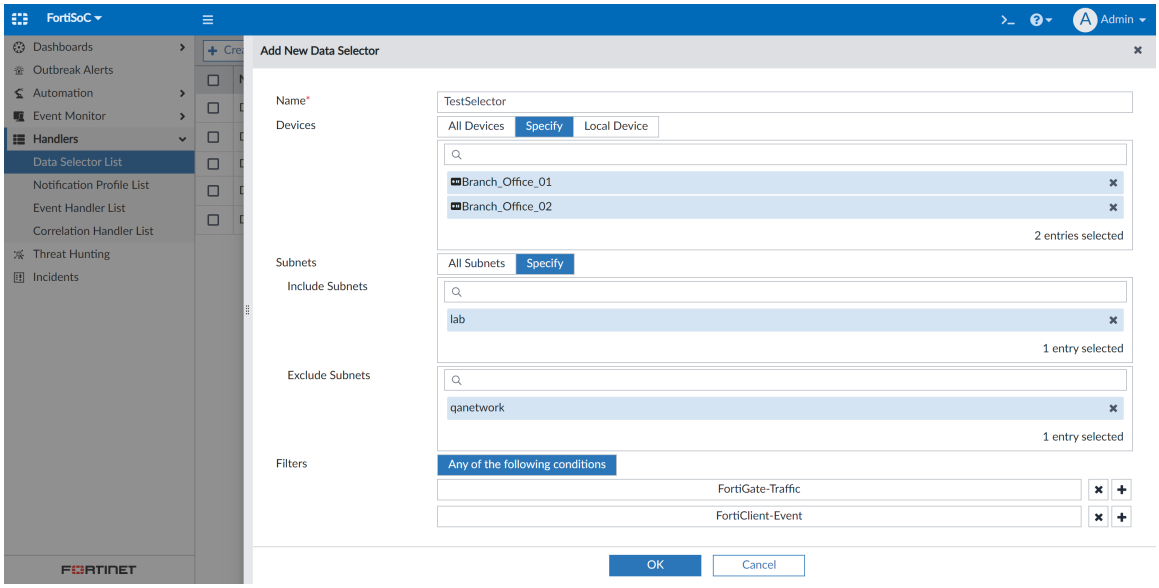
These default data selectors are used in some of the predefined event handlers, and they cannot be edited or deleted.



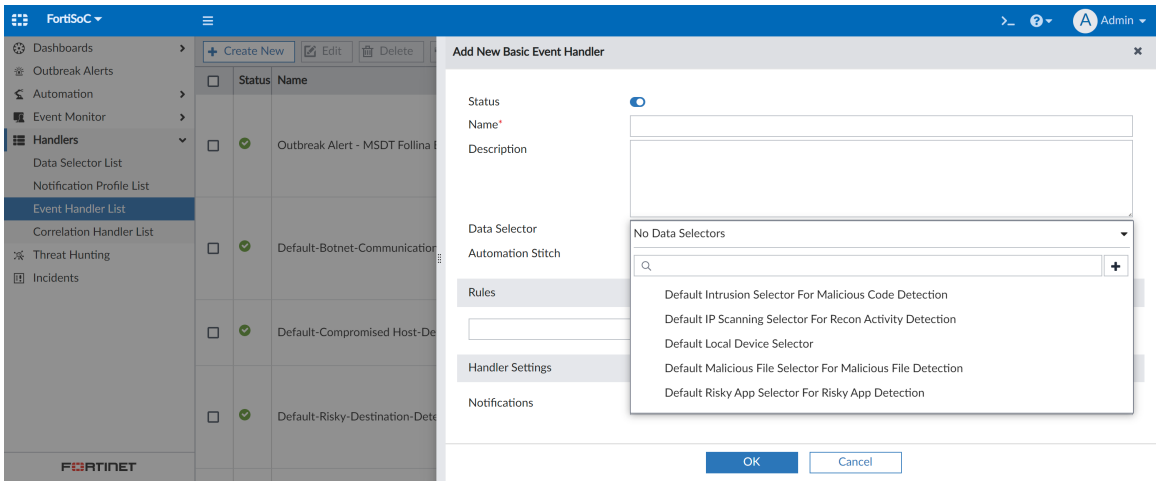
When configuring a data selector, you must specify:

- Devices
- Subnets
- Filters

The filters in data selectors are applied before every rule configured in the event handler. As a result, the filters do not need to be configured individually within each rule of the event handler (s) that the data selector is assigned to.

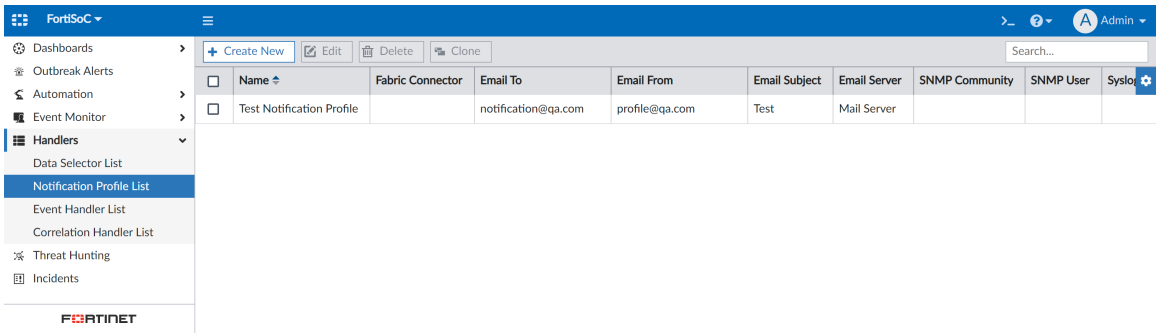


Once configured, the data selectors can be applied to basic event handlers and correlation event handlers, where needed.

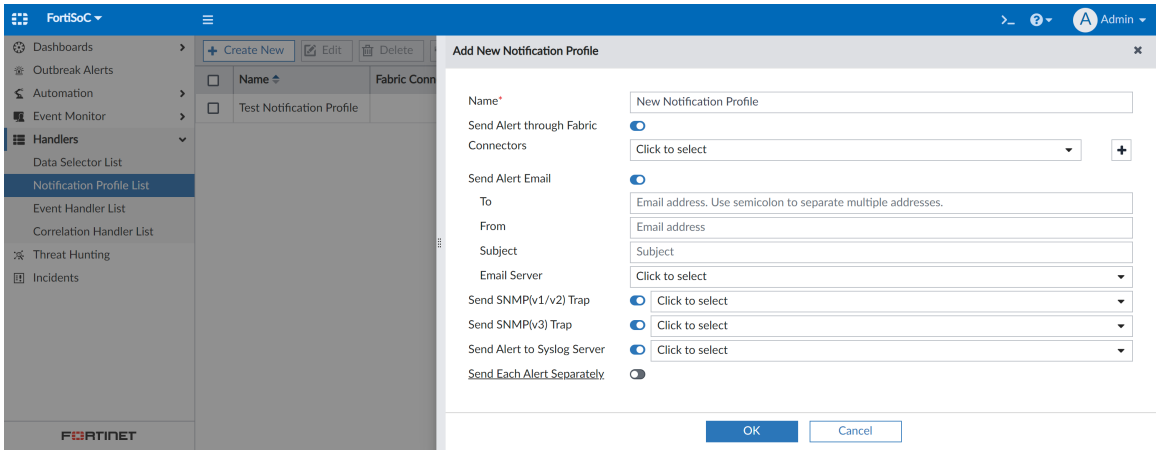


Notification profiles

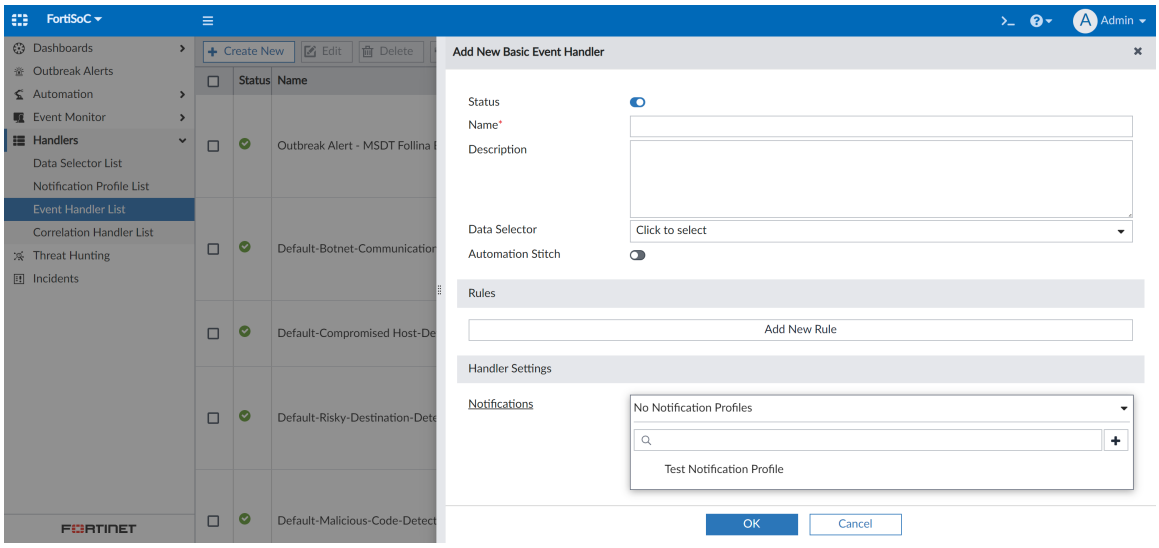
Notification profiles determine if and where an event handler sends an alert notification when generating an event. You can create, edit, clone, and delete notification profiles in *FortiSoC* > *Handlers* > *Notification Profile List*.



You can configure the notification profile to send the alert to an email address, SNMP community, and/or syslog server. You can also configure the notification profile to send the alert through a fabric connector.



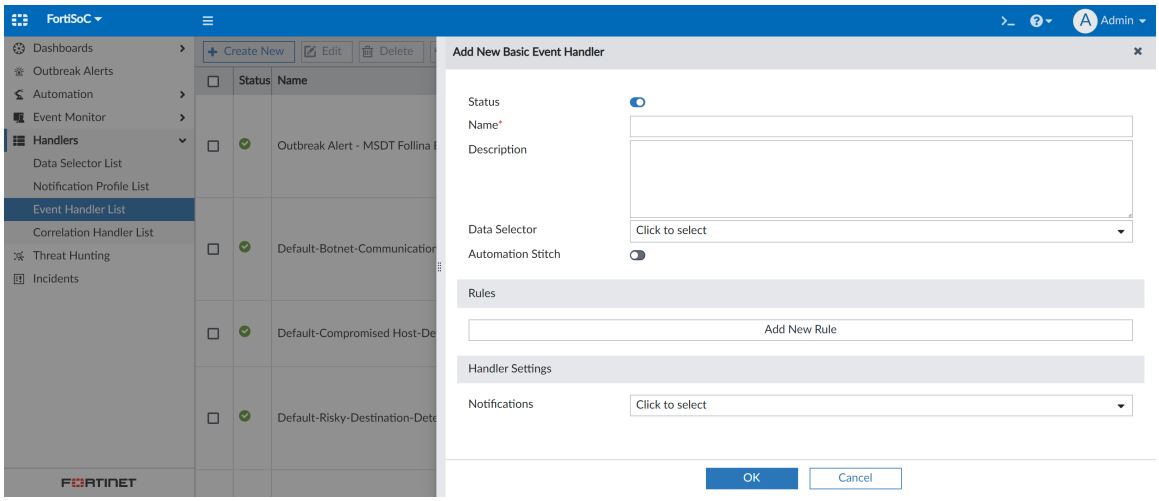
Similar to data selectors, notification profiles can be assigned to basic event handlers and correlation event handlers, where needed.



Event handlers

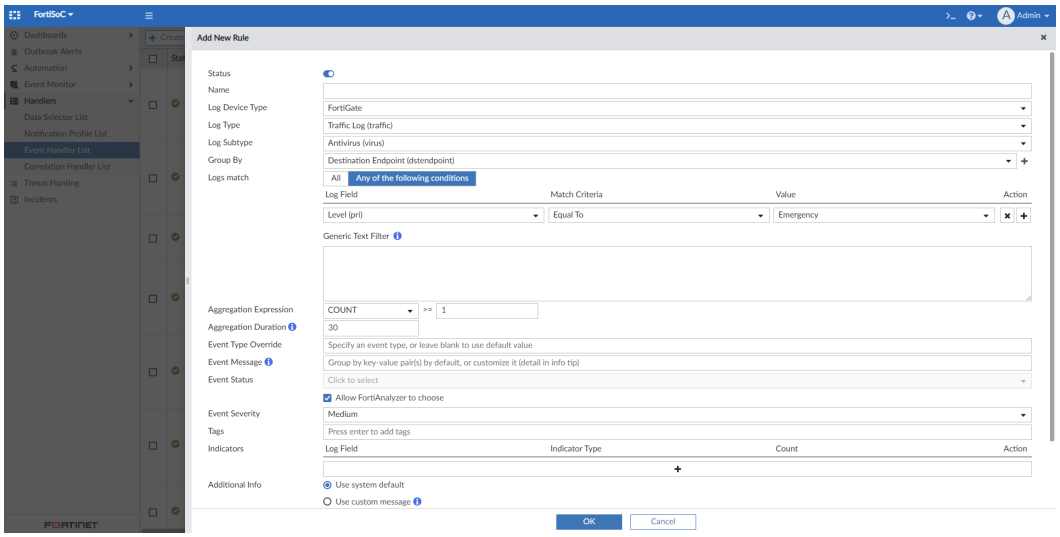
You can create, edit, clone, delete, and import/export basic event handlers in *FortiSoC* > *Handlers* > *Event Handler List*.

When creating and editing an event handler, you can assign a data selector and notification profile.

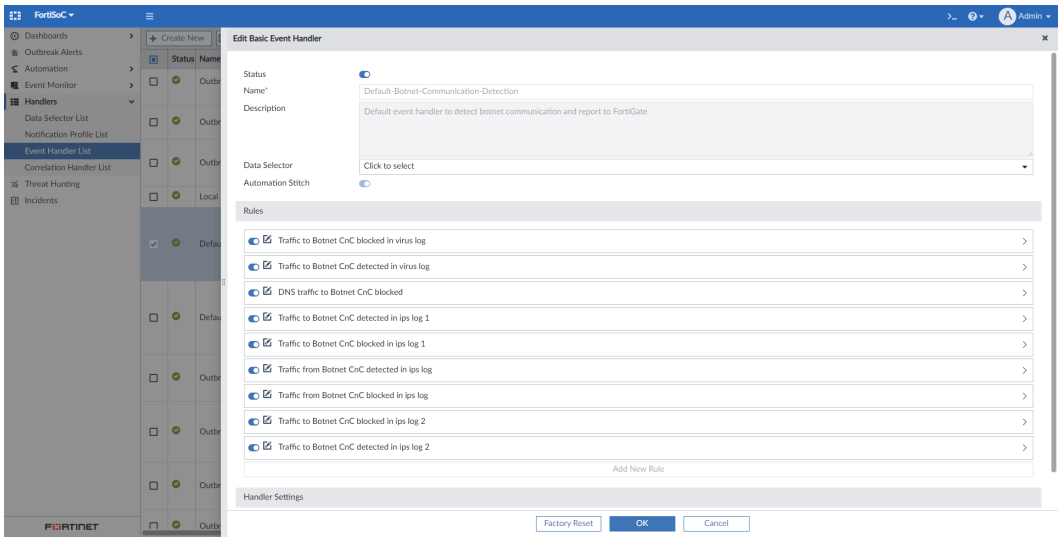


You can also configure the event handler rules according to your needs.

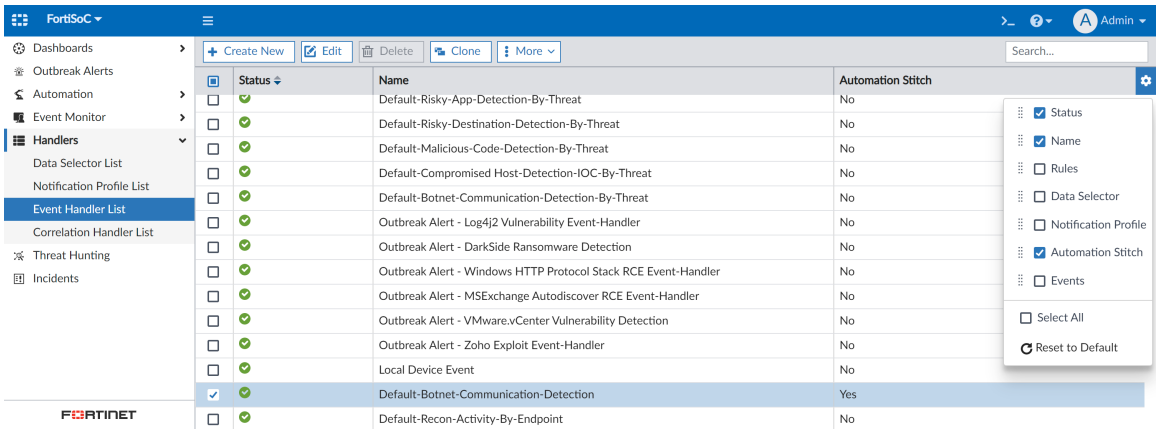
The event handler "rules" were previously known as "filters".



The *Automation Stitch* option is now available when configuring event handlers. Events triggered from event handlers with the automation stitch enabled are pushed to the FortiGate for further processing. These events can be viewed in the FortiAnalyzer GUI as well. For example, see the predefined event handler below with *Automation Stitch* enabled.



An *Automation Stitch* column is added in the *Event Handler List* to identify which event handlers have the automation stitch enabled.



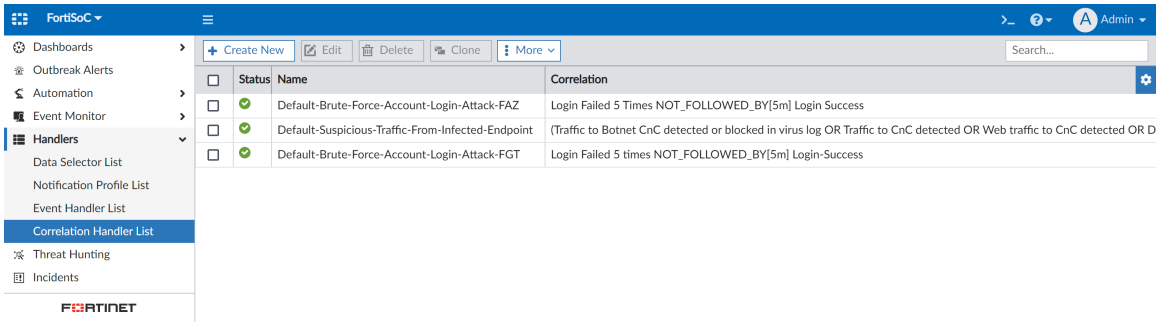
Correlation handlers

You can create, edit, clone, delete, and import/export correlation event handlers in *FortiSoC* > *Handlers* > *Correlation Handler List*.

There are three default correlation handlers:

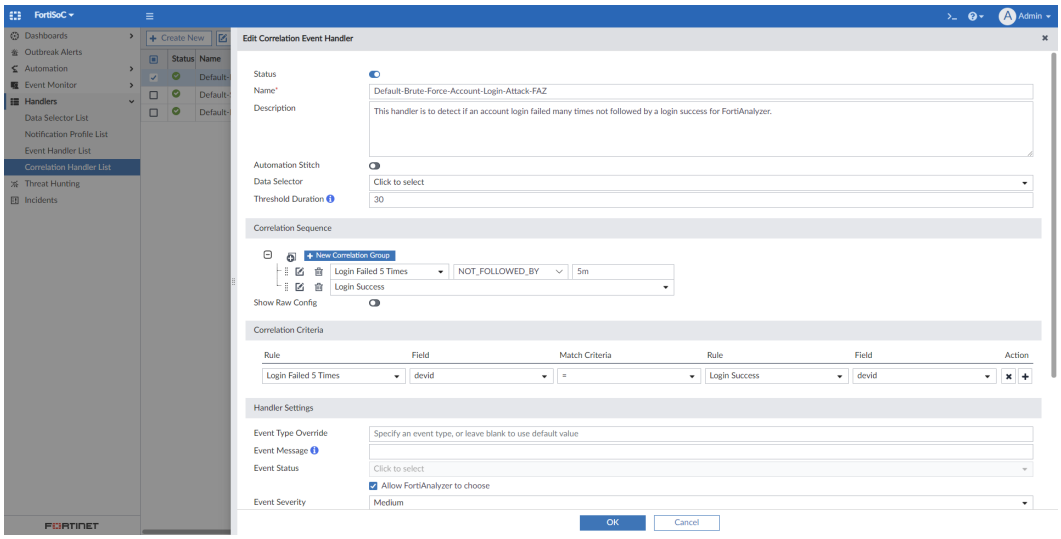
- *Default-Brute-Force-Account-Login-Attack-FAZ*
- *Default-Brute-Force-Account-Login-Attack-FGT*
- *Default-Suspicious-Traffic-From-Infected-Endpoint*

These correlation handlers are disabled by default. Some of their settings can be edited, and they can be enabled according to your needs. To enable the correlation handlers, as they are in the image below, select the correlation handler and click *More* > *Enable*.

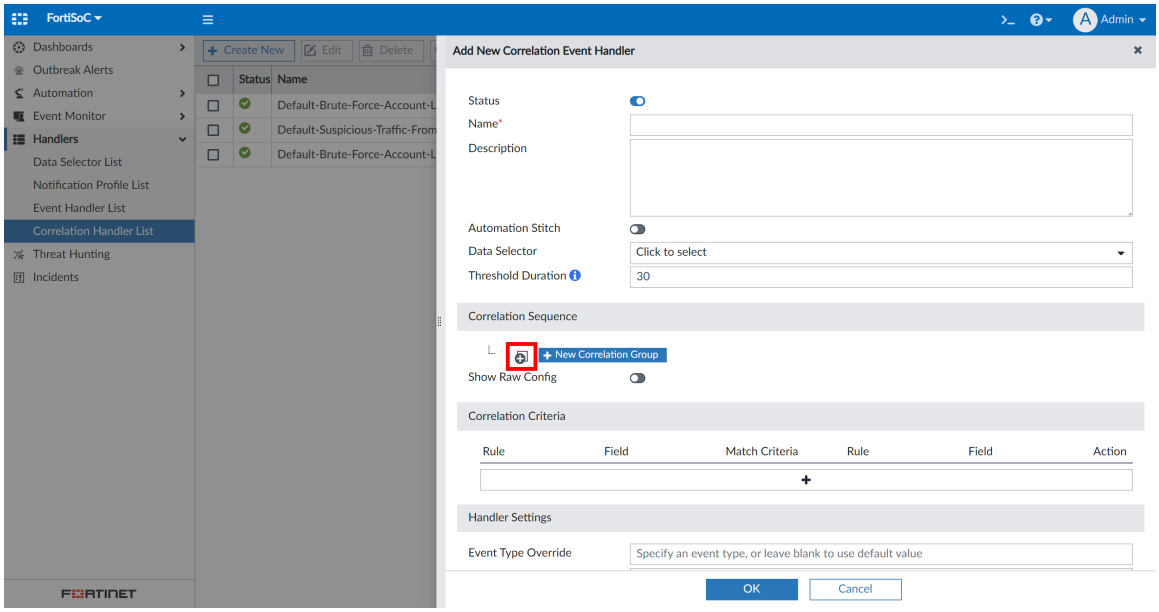


Similar to basic event handlers, you can assign a data selector and notification profile to the correlation event handler. You can also enable the *Automation Stitch*, if needed.

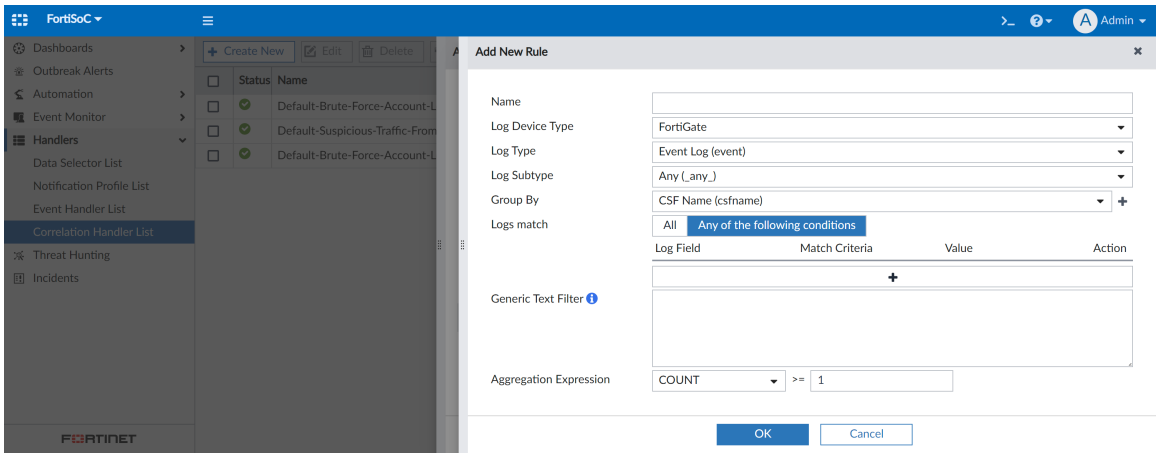
When configuring rules for the correlation event handler, you must also configure a correlation sequence and correlation criteria for those rules. For example, see the default correlation handler below.



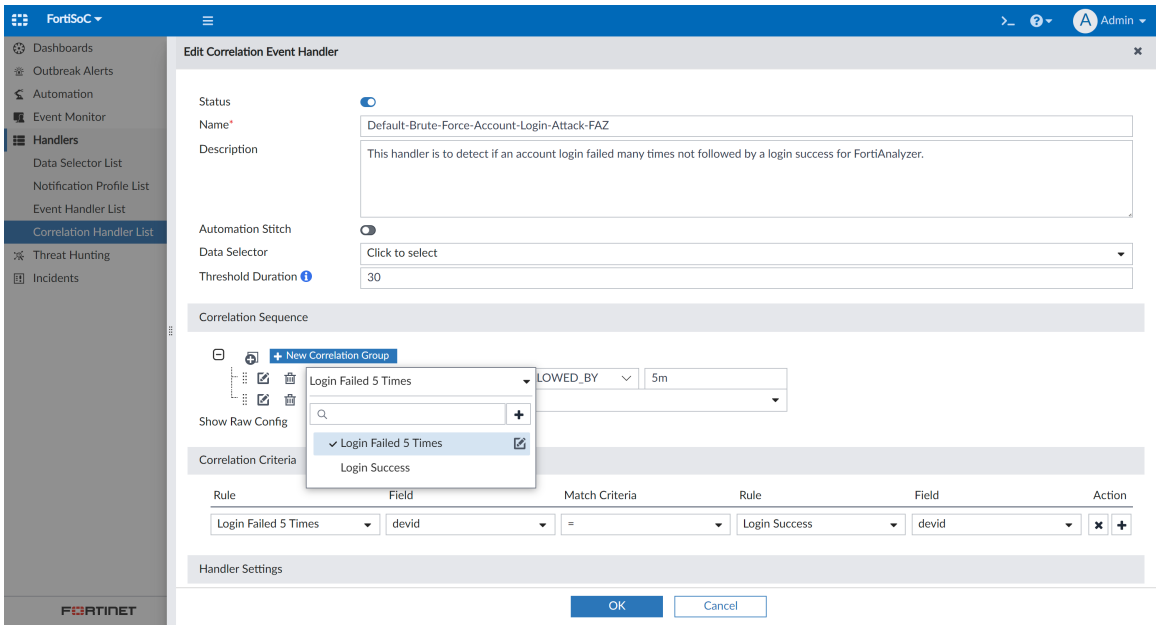
When creating a new correlation handler, you can add rules using the plus (**+**) icon in the *Correlation Sequence* section.



You can configure the same options in a rule for a correlation handler as in a basic event handler. For example, see a rule from the default correlation handler below.

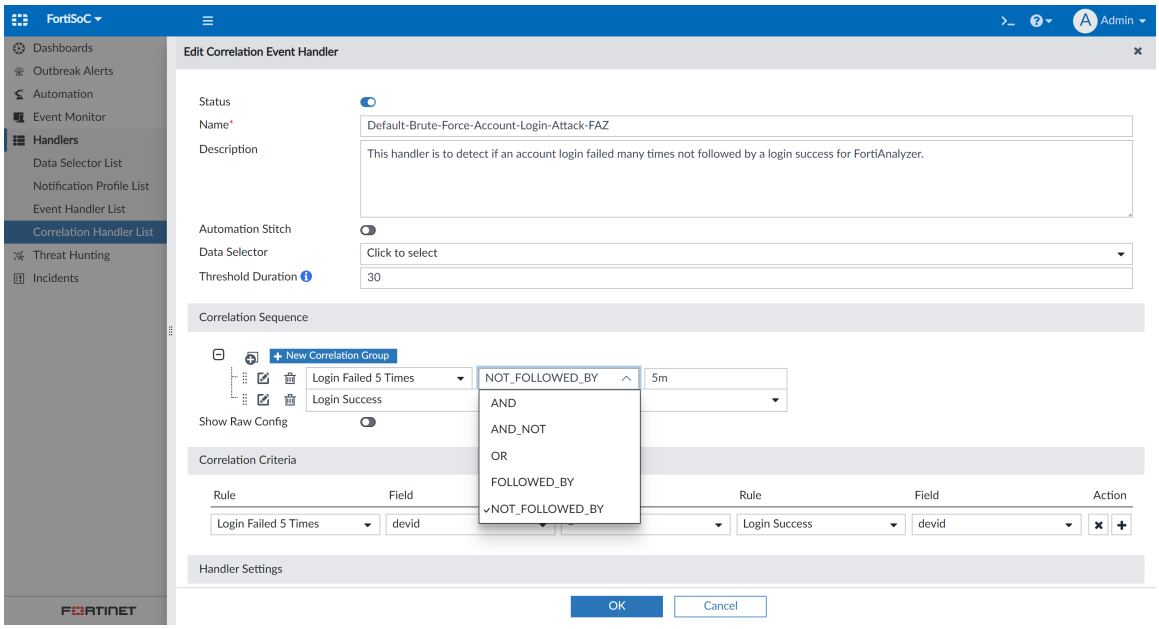


Rules are added to the correlation sequence in the order that they are created. You can create the rules in the desired order for the sequence, or re-order them into the correlation sequence after they are created. After creating the rules, use the dropdown to select other rules created in the correlation handler, thereby changing the sequence order.

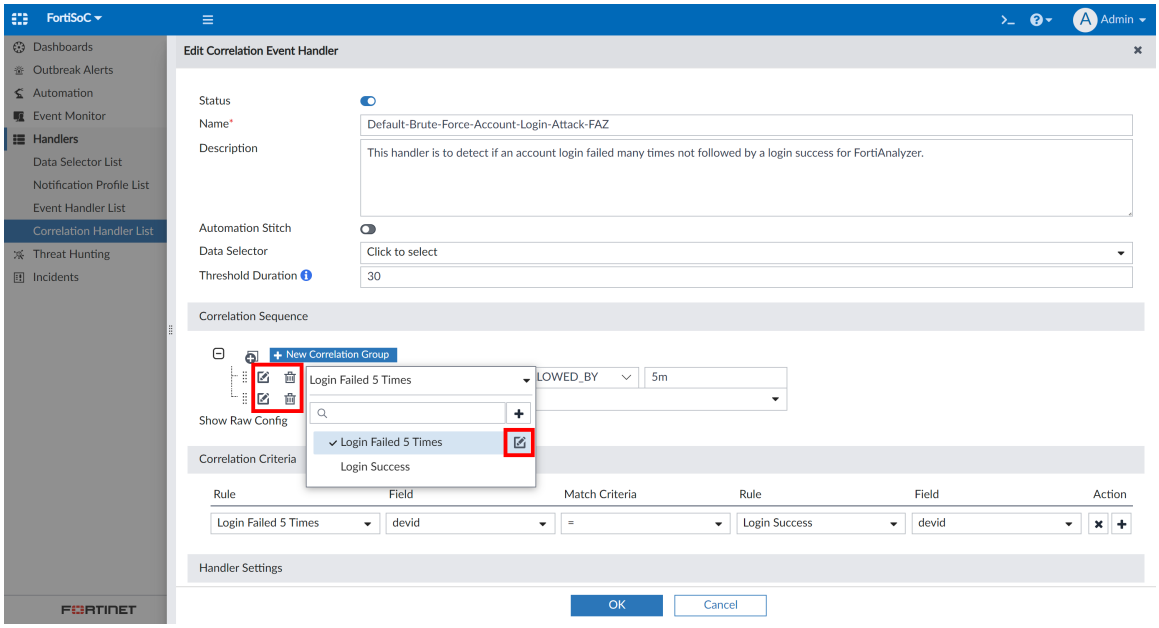


All rules must be met in correlation sequence to generate an event. You can select from the following options to set the relationship between each rule in sequence:

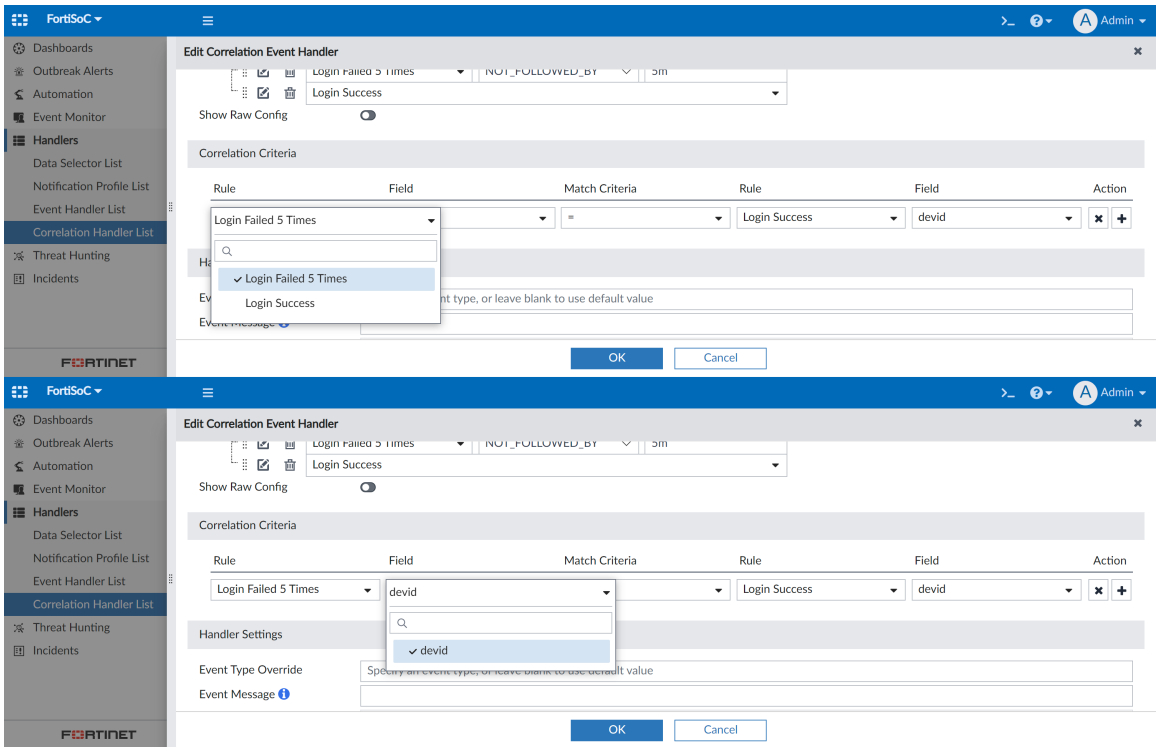
- *AND*
- *AND_NOT*
- *OR*
- *FOLLOWED_BY* (if selected, enter a time limit for the correlation to occur in)
- *NOT_FOLLOWED_BY* (if selected, enter a time limit for the correlation to occur in)



You can edit or delete rules within the correlation sequence by using the icons next to the rule. Alternatively, you can click the edit icon in the rule dropdown to edit its settings.



In the *Correlation Criteria* section, you can specify the fields that the event handler will look for to correlate the rules. You can add multiple correlation criteria, if needed. Each correlation criteria is applied to two rules, using a field from each rule to correlate the two. The options available in the *Field* dropdown are determined by the *Group By* fields configured in the rules. For example, see the correlation criteria from the default correlation handler.



Events generated from both basic event handlers and correlation event handlers appear in *FortiSoC* > *Event Monitor*.

Data exfiltration detection - 7.2.2

The aggregation expression *SUM* has been introduced to calculate log field values within a certain period. Event handlers can use the *SUM* expression to trigger events/notifications when the content of log fields reach a certain threshold.

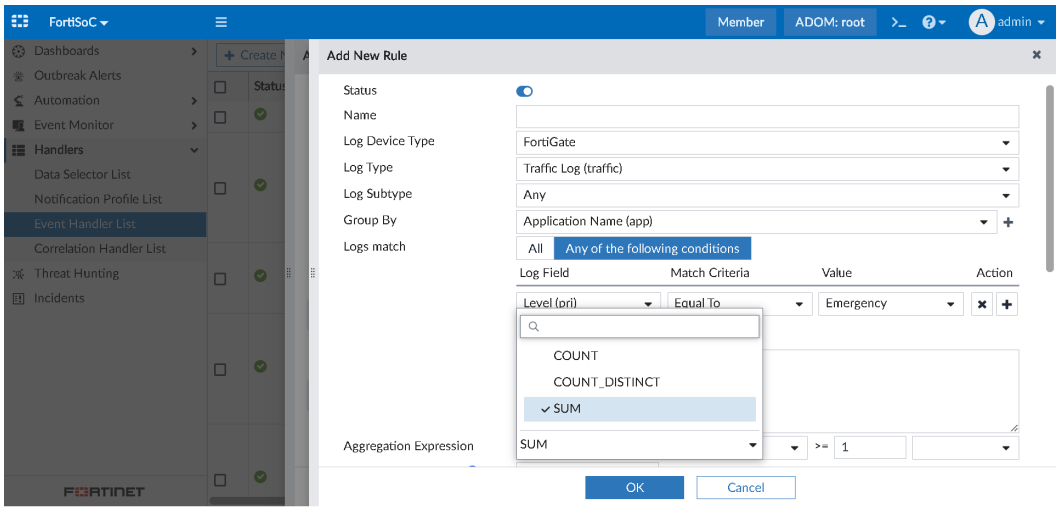
This new feature is used to detect data exfiltration attempts.

The *Aggregation Expression* can be set to *SUM* when configuring rules for both event handlers and correlation handlers. For more information about correlation handlers, see Rule based event correlation 7.2.2 on page 28.

To use the *SUM* aggregation expression in an event handler:

1. Go to *FortiSoC* > *Handlers* > *Event Handler List*, and click *Create New*.
2. Click *Add New Rule*.
   You can also edit or clone an event handler to edit an existing rule.

3. From the *Aggregation Expression* dropdown, select *SUM*.



4. Enter the following for the *Aggregation Expression*:

Option	Description
Aggregation field	Select an aggregation field from the dropdown. The available options depend on the *Log Device Type* and *Log Type* selected for the rule.
Threshold	Enter the threshold value required to satisfy the rule. When the data from multiple logs reaches this sum threshold, the rule condition will be satisfied.
Multiplier	For some aggregation fields, you can select a multiplier for the threshold value. For example, when *sentbyte* is selected as the aggregation field, you can select one of the following multipliers: • *null* (bytes) • *Kilo Byte* • *Mega Byte* • *Giga Byte* • *Terra Byte*

5. In the *Aggregation Duration* field, enter the number of minutes the logs have to reach this sum in order to satisfy the rule.
6. Configure the remaining options for the rule and the event handler, as needed.

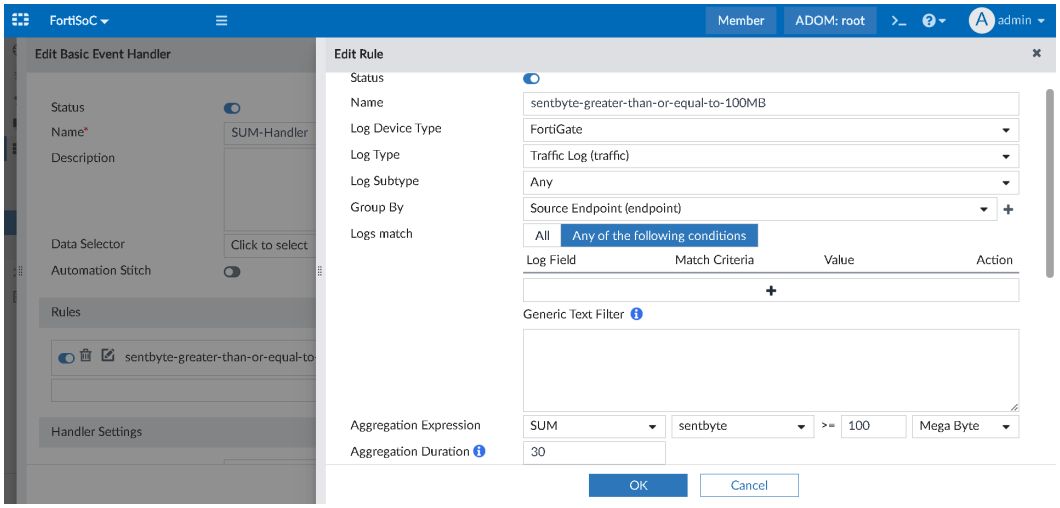
Example:

Below is an event handler configured to generate an alert when a total of 100MB of data is sent from an endpoint within 30 minutes:

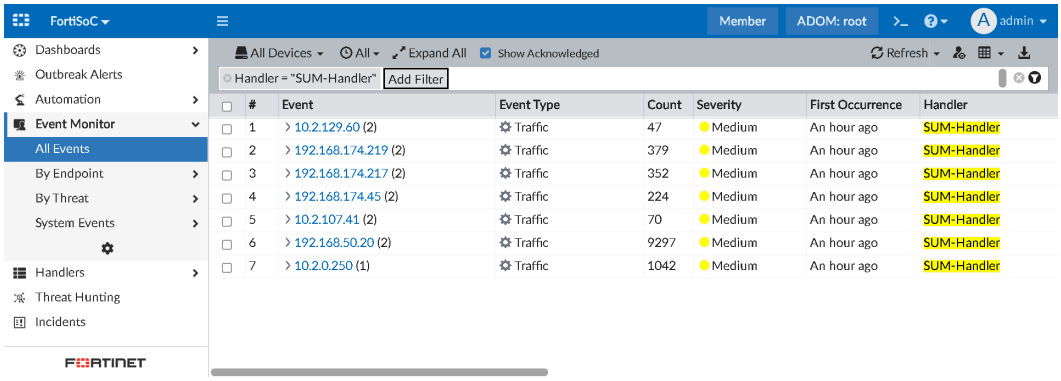
- *Aggregation Expression = SUM*

Aggregation field	sentbyte
Threshold	100
Multiplier	Mega Byte

- *Aggregation Duration = 30*



Events triggered by this event handler appear in *FortiSoC > Event Monitor > All Events*. For example, see the image below.



Dashboards

This section lists the new features added to FortiAnalyzer for dashboards:

- SD-WAN chart to include more ADVPN shortcut information on page 40
- SD-WAN chart for MOS scoring on page 42
- Add ZTNA dashboard to FortiView on page 46
- IoT visibility on page 49
- Traffic shaping charts 7.2.1 on page 50

- CASB Apps Access widget 7.2.1 on page 53
- Auto-refresh on FortiSoC dashboard elements 7.2.2 on page 54

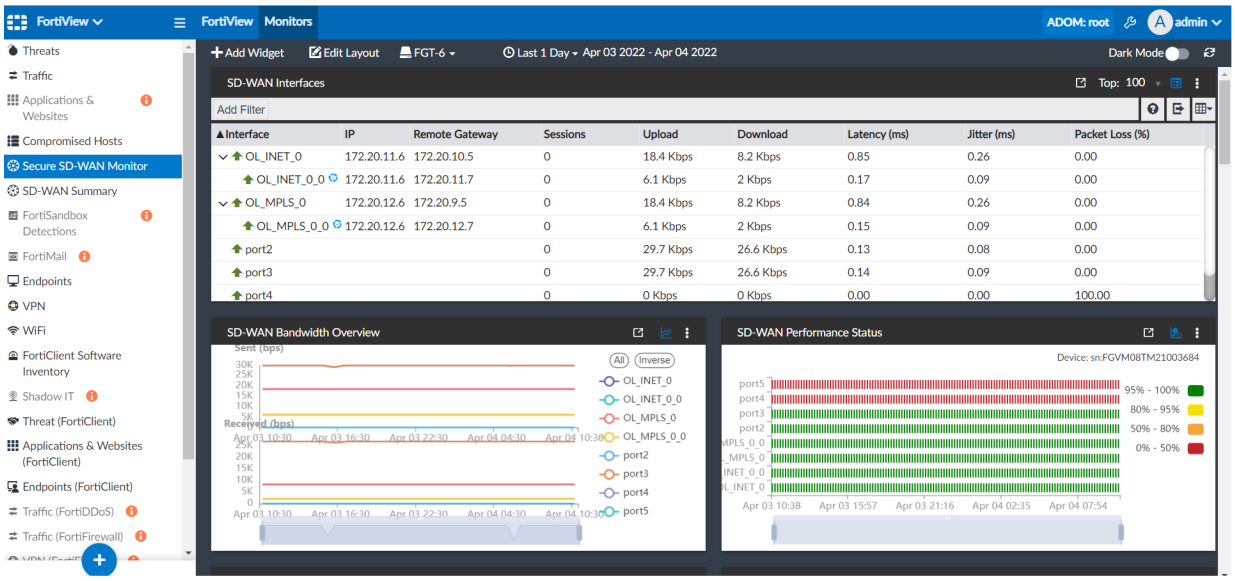
SD-WAN chart to include more ADVPN shortcut information

The *SD-WAN Interfaces* widget is available in *FortiView > Monitors > Secure SD-WAN Monitor*.

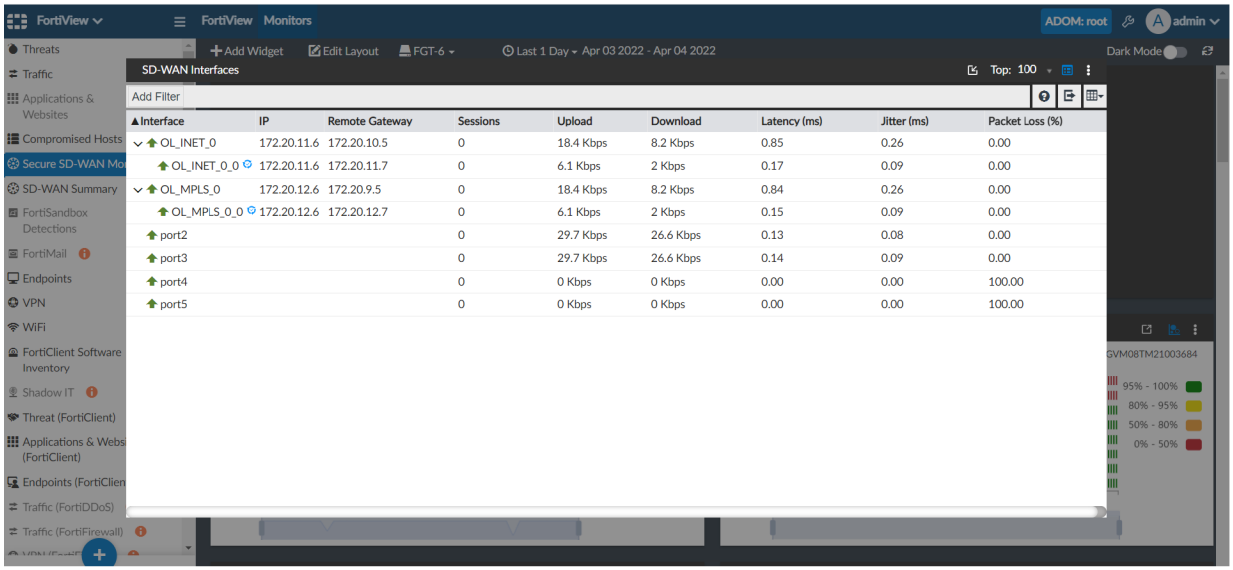
This widget displays the following information for SD-WAN interfaces: IP, Remote Gateway, Sessions, Upload, Download, Latency (ms), Jitter (ms), and Packet Loss (%). The Upload and Download columns can be used to show outbound and inbound bandwidth. For a VPN tunnel interface, IP and Remote Gateway are the local IP and Remote Gateway IP of the VPN tunnel.

To view the SD-WAN interface information:

1. Go to *FortiView > Monitors > Secure SD-WAN Monitor*.
   The SD-WAN Interfaces widget is displayed.



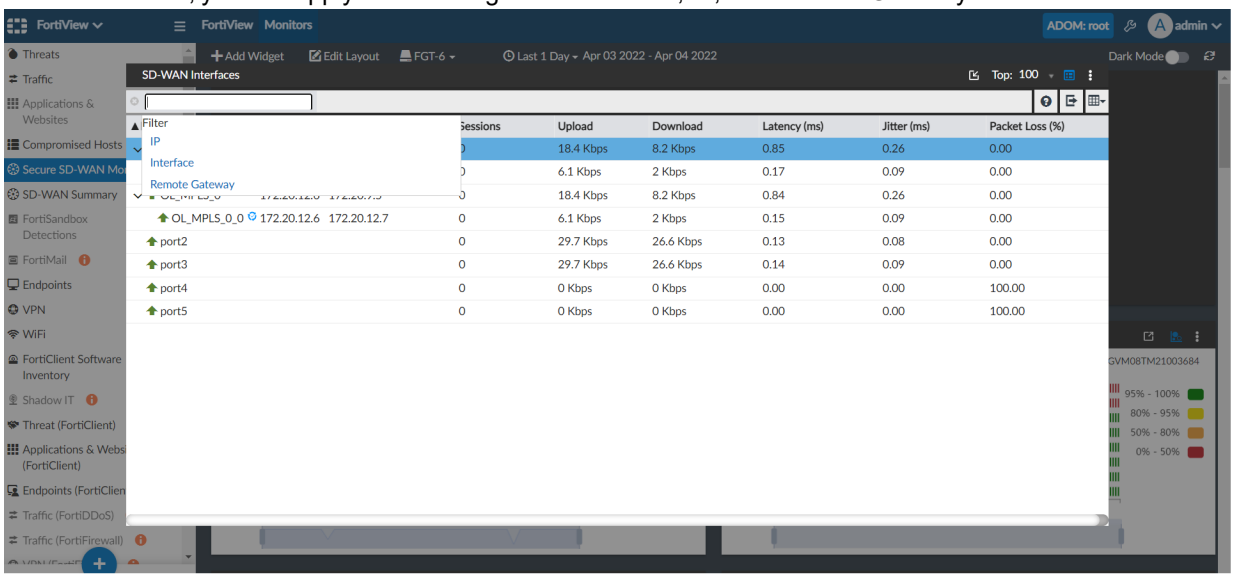
2. If there is an expand icon in the row, click the icon to view the ADVPN shortcut information in a row below. The IP and Remote Gateway are the local spoke IP and remote spoke IP of the shortcut VPN tunnel.



The following information is available in the widget:

Interface	The name of the interface.
IP	The IP address for the interface.
Remote Gateway	The remote gateway IP address.
Sessions	The number of sessions for the interface.
Upload	The upload speed for the interface.
Download	The download speed for the interface.
Latency (ms)	The latency for the interface.
Jitter (ms)	The jitter for the interface.
Packet Loss (%)	The packet loss for the interface.

3. In the table chart, you can apply the following filters: Interface, IP, and Remote Gateway.



SD-WAN chart for MOS scoring

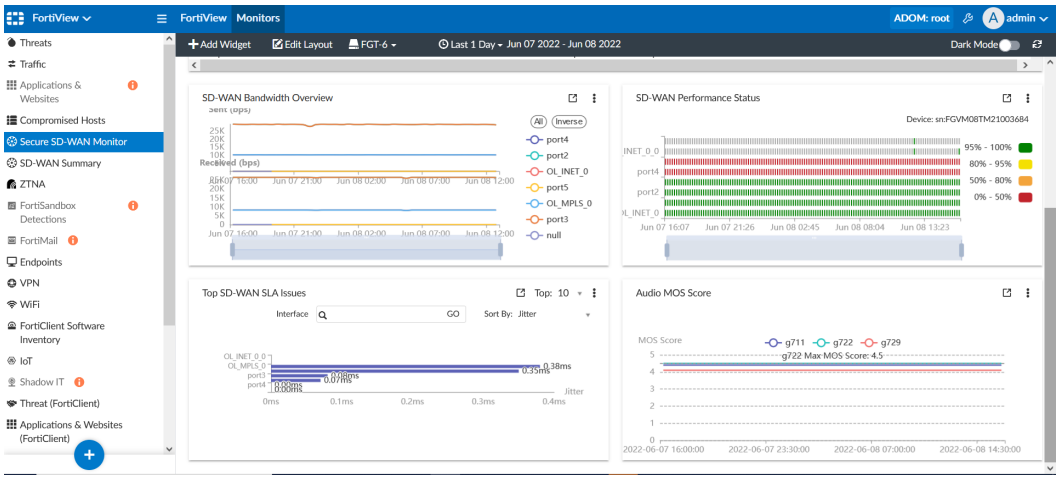
An *Audio MOS Score* widget is added to *FortiView* > *Monitors* > *Secure SD-WAN Monitor* and *FortiView* > *Monitors* > *SD-WAN Summary*. These widgets display logs for the MOS (mean opinion score) of voice and video traffic.

MOS is a method to measure the impact network quality has on the quality of a voice call. It is the industry standard for measuring voice and video quality on a WAN link.

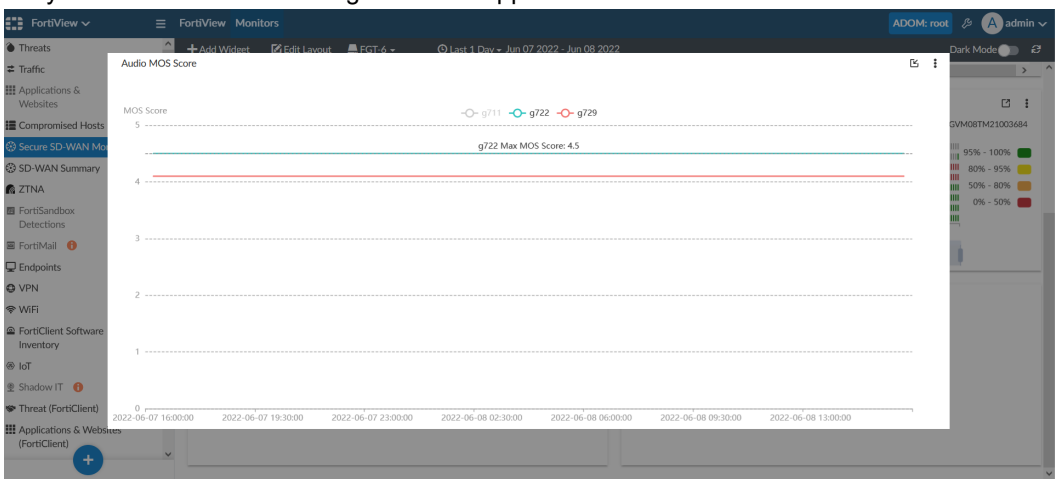
The FortiGate version must be on version 7.2 or later and have the MOS codec and MOS threshold attributes defined for SD-wan health check in order for FortiAnalyzer to display information in the MOS scoring widgets.

To view the Audio MOS Score for individual devices:

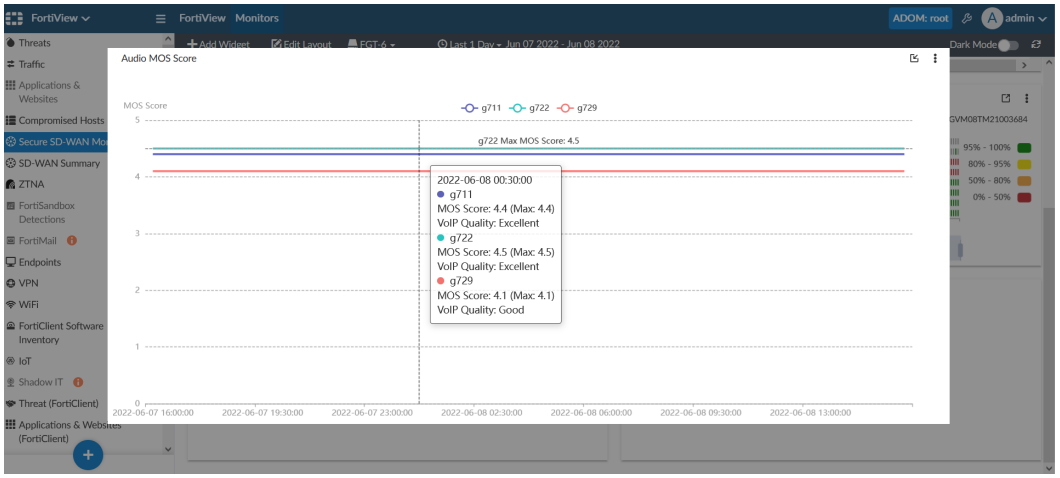
1. Go to *FortiView* > *Monitors* > *Secure SD-WAN Monitor*.
2. Click *Add Widget*, and add the *Audio MOS Score* widget.
   The widget includes a line graph of the MOS score for different codecs for the selected device over a specified time period.



3. Click a codec in the legend to make it appear/disappear on the chart.
Greyed-out interfaces on the legend do not appear on the chart.

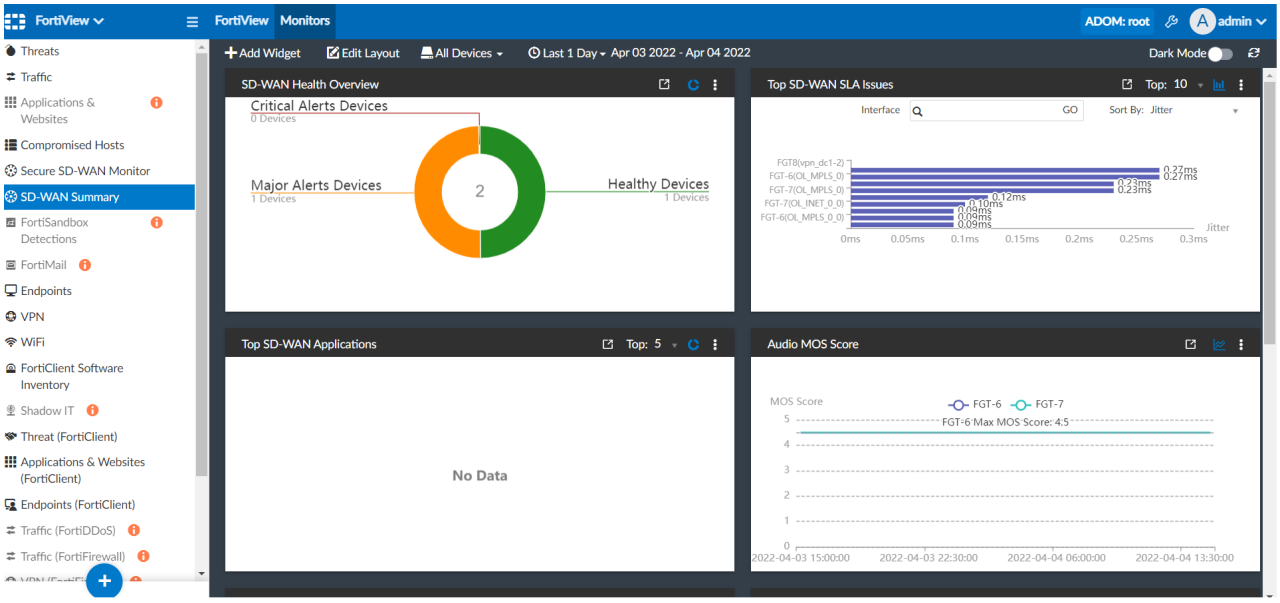


4. Hover your cursor over the chart to see a summary at that point.
This summary includes the MOS score and the VoIP quality at that time. VoIP quality is divided into levels based on MOS scoring: Excellent = 4.3 - 5.0, Good = 4.0 - 4.3, Fair = 3.6 - 4.0, Poor = 3.1 - 3.6, Bad = 2.6 - 1.0.

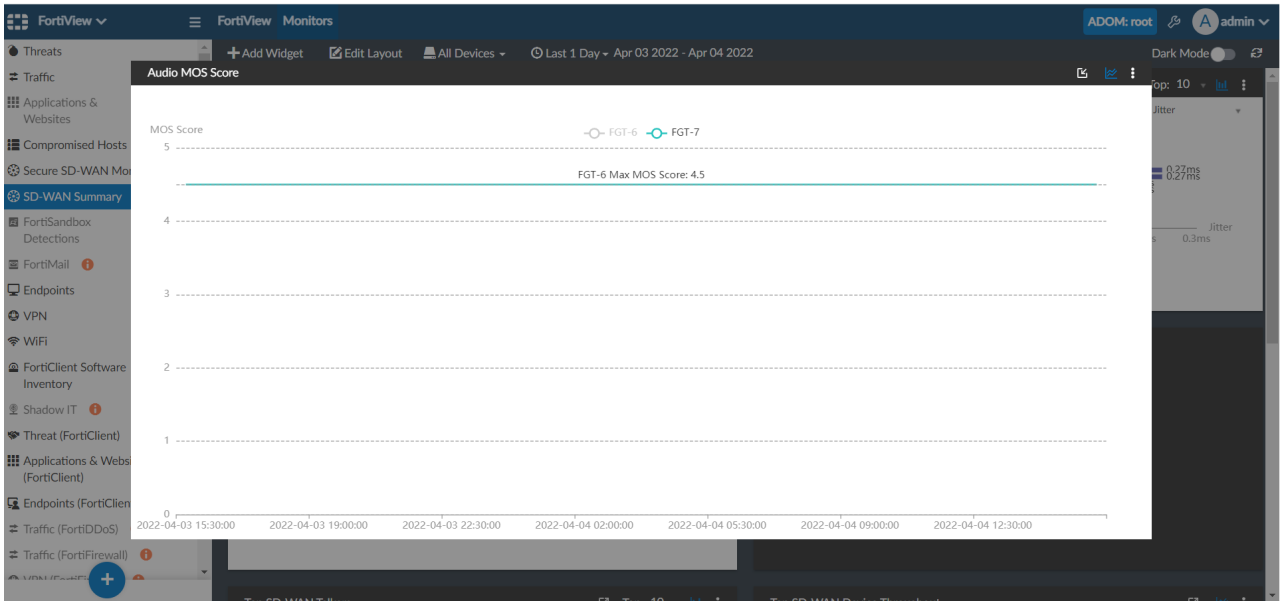


To view the Audio MOS Score across all devices:

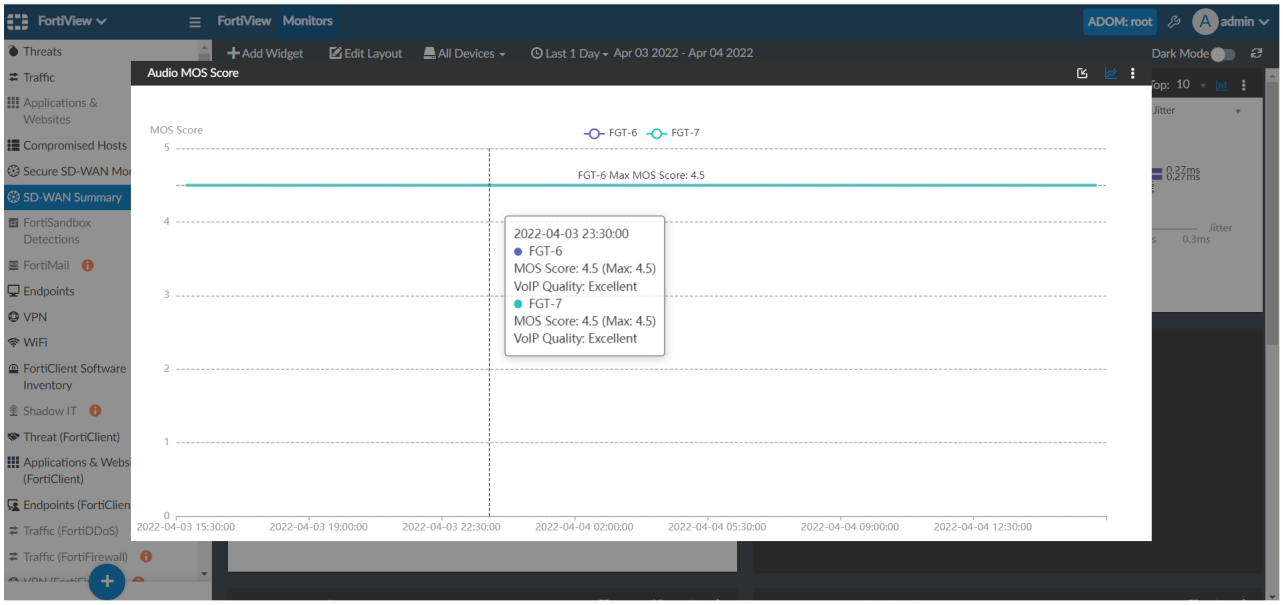
1. Go to *FortiView* > *Monitors* > *SD-WAN Summary*.
2. Click *Add Widget*, and add the *Audio MOS Score* widget.
   The widget includes a line graph of MOS score per device on the network.



3. Click a device in the legend to make it appear/disappear on the chart.
   Greyed-out devices on the legend do not appear on the chart.



4. Hover your cursor over the chart to see a summary at that point.
   This summary includes the MOS score and the VoIP quality at that time.



To configure the FortiGate MOS codec and threshold in health check settings:

1. Access the FortiGate CLI.
2. Enter the following commands:

```
config system sdwan
   config health-check
      edit <name>
         set server {string}
         set sla-fail-log-period {integer}
         set sla-pass-log-period {integer}
         set members <seq-num1>, <seq-num2>, ...
         set mos-codec [g711|g722|...]
   config sla
      edit <id>
         set link-cost-factor {option1}, {option2}, ...
         set mos-threshold {string}
      next
   end
```

For example:

```
config system sdwan
   config health-check
      edit "test_dc"
         set server "10.200.1.1"
         set sla-fail-log-period 15
         set sla-pass-log-period 15
         set members 1 2
         set mos-codec g722
   config sla
      edit 1
         set link-cost-factor latency jitter packet-loss mos
         set mos-threshold "2.0"
      next
```

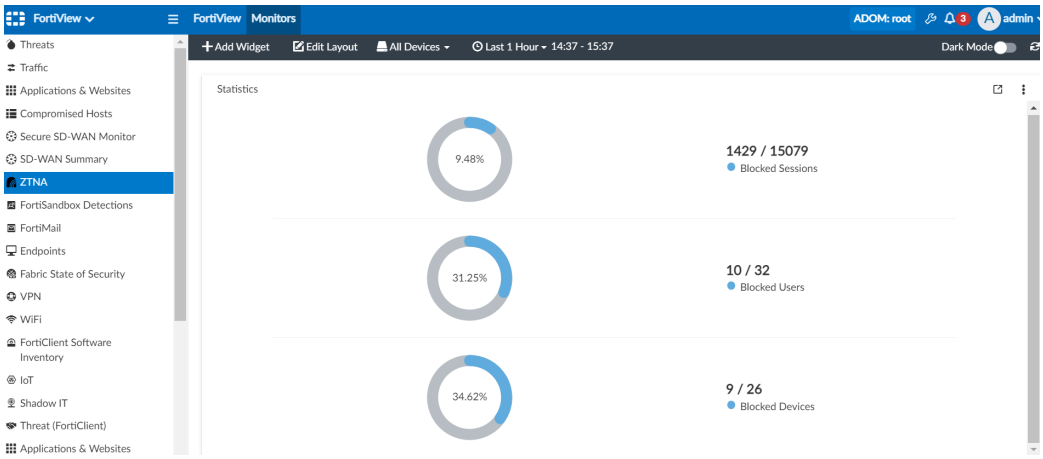
```
end
```

Add ZTNA dashboard to FortiView

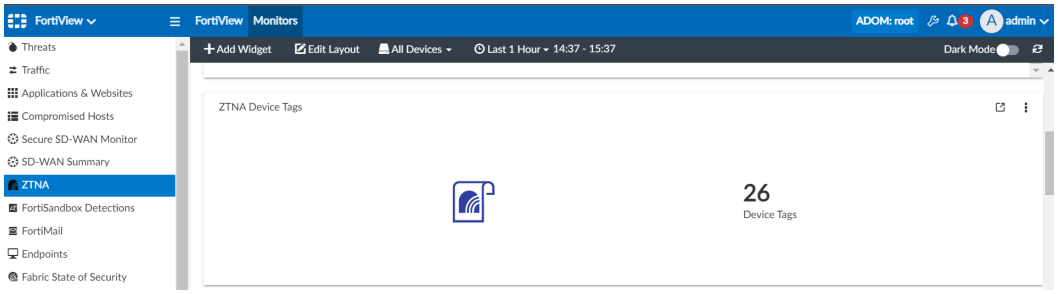
A ZTNA dashboard is added to *FortiView* > *Monitors*, providing visibility to ZTNA metrics.

This dashboard includes the following widgets:

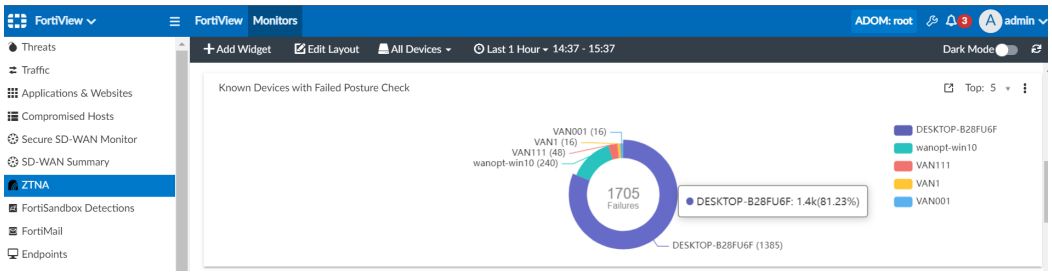
- *Statistics*: Displays the blocked sessions/total sessions, blocked users/total users, and blocked devices/total devices. The percentage of blocked sessions, users, and devices displays within their donut chart.



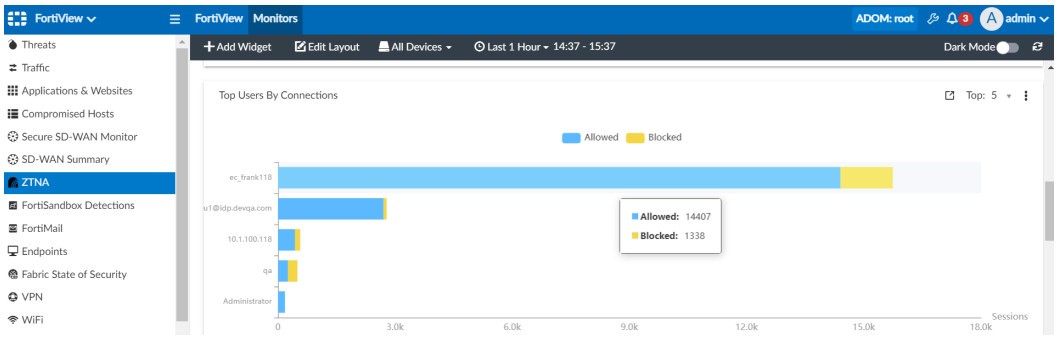
- *ZTNA Device Tags*: Displays the total number of device tags.



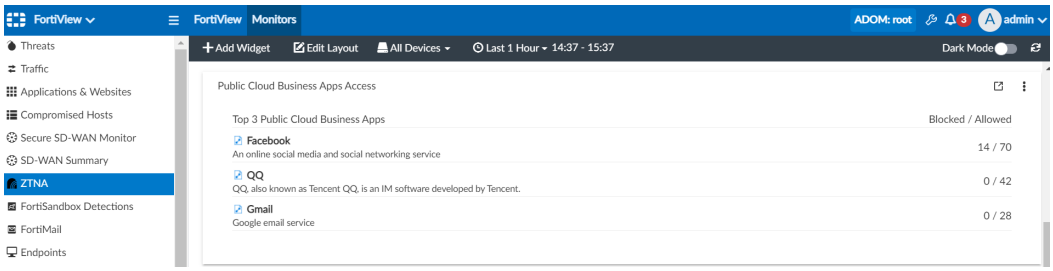
- *Known Devices with Failed Posture Check*: Displays the number of known devices with failed posture check by user. Mouse over the donut chart to display the related number devices and its percentage of the total in a tooltip.



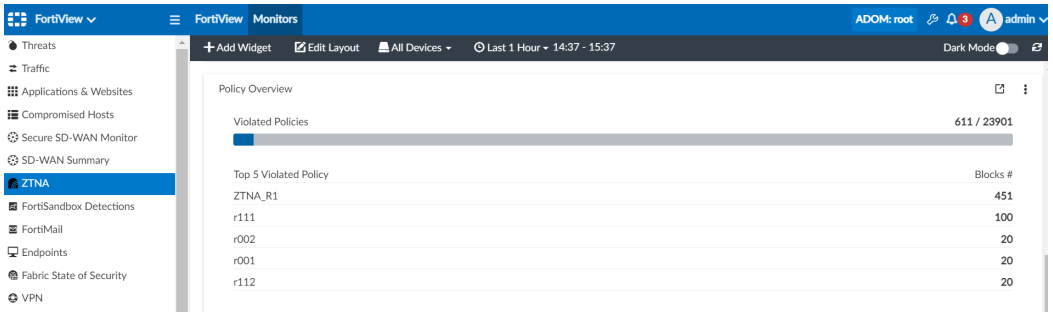
- *Top Users by Connections*: Displays the number of allowed and blocked sessions per user. Mouse over the bar chart to display the number of allowed and blocked sessions for that user in a tooltip.



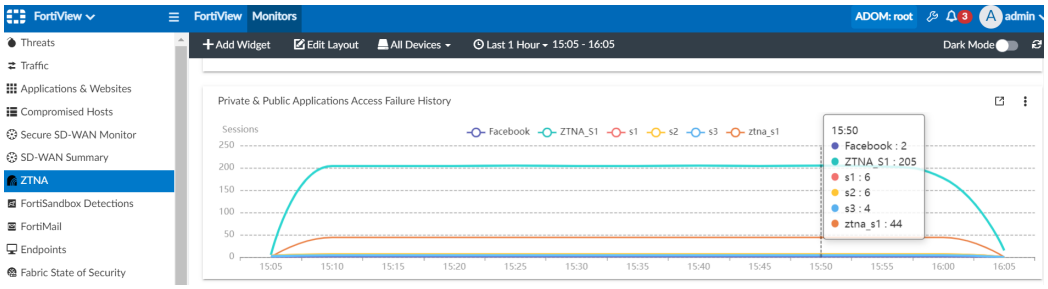
- *Public Cloud Business Apps Access*: Displays the top three public cloud business apps, including a description and the number of blocked/allowed sessions for each app.



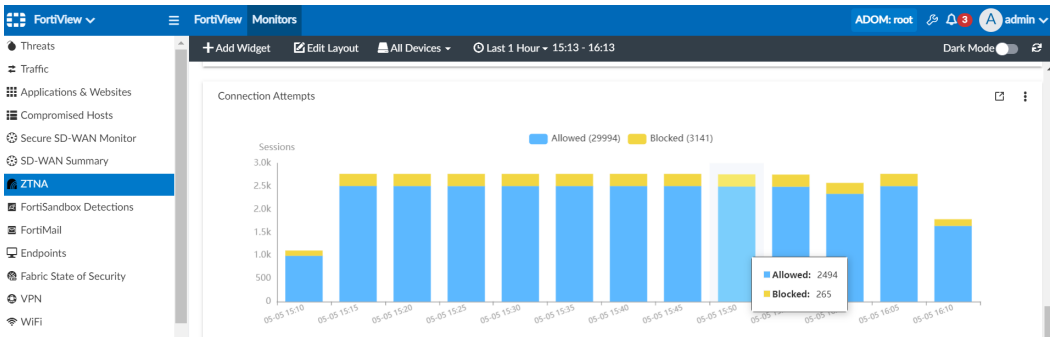
- *Policy Overview*: Displays the top five violated policies, including the total number of blocked/allowed sessions. This widget also displays the number of blocked sessions per policy.



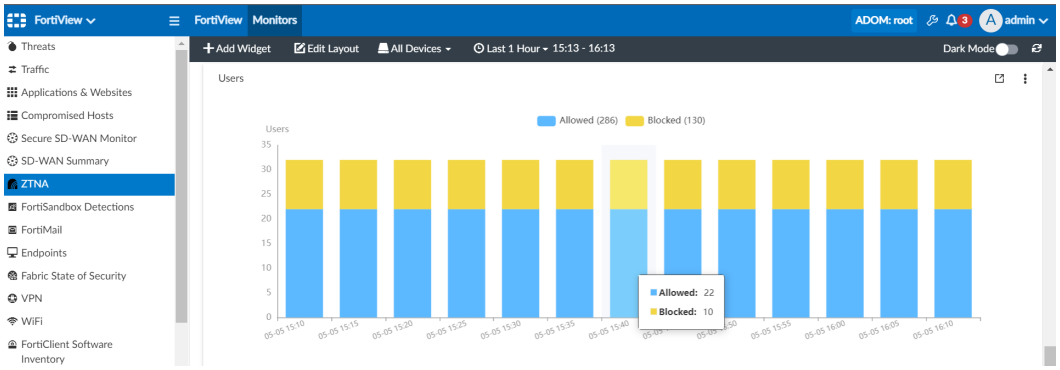
- *Private & Public Applications Access Failure History*: Displays the private and public applications with failed access history. Mouse over the line chart to view the number of access failures per app in a tooltip.



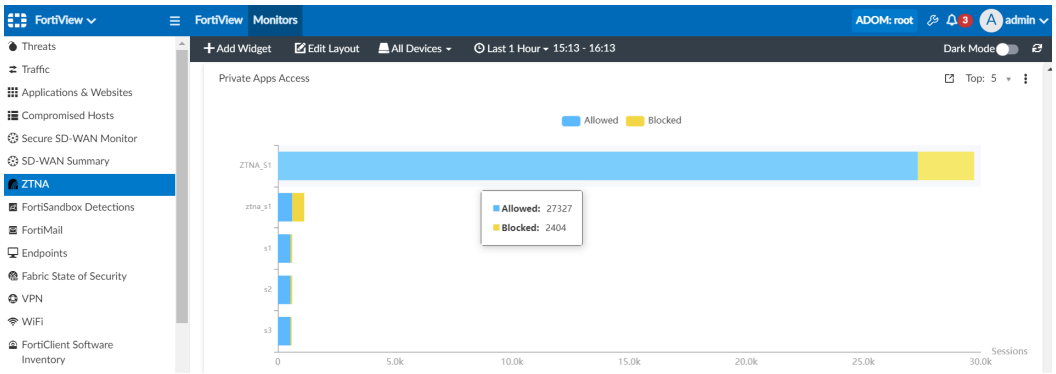
- *Connection Attempts*: Displays the number of allowed and blocked sessions within the selected time range. Mouse over the bar chart to display the number of allowed and blocked sessions at that specific time in a tooltip.



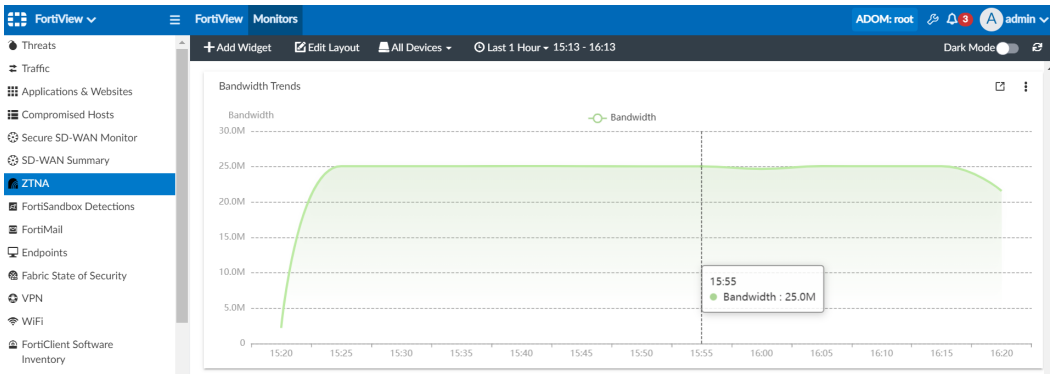
- *Users*: Displays the number of allowed and blocked users within the selected time range. Mouse over the bar chart to display the number of allowed and blocked users at that specific time in a tooltip.



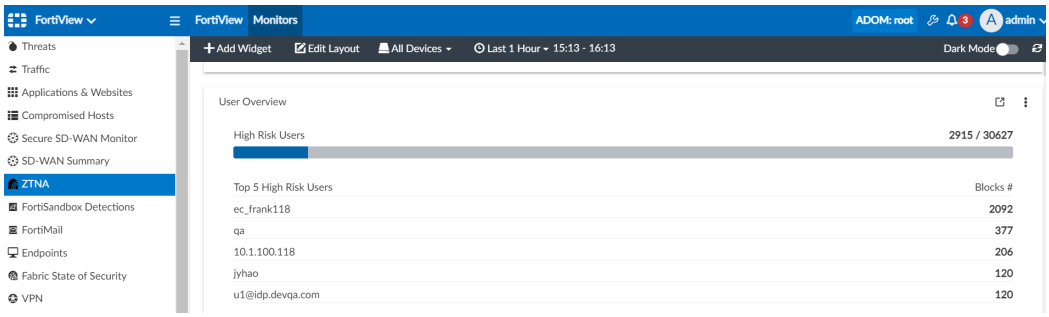
- *Private Apps Access*: Displays the number of allowed and blocked sessions per access proxy. Mouse over the bar chart to display the number of allowed and blocked sessions for that access proxy in a tooltip.



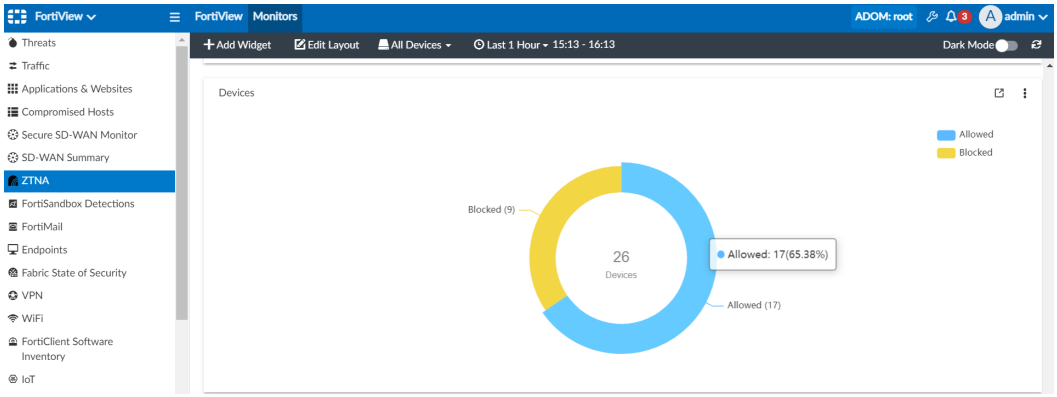
- *Bandwidth Trends*: Displays the bandwidth trends in the selected time range. Mouse over the line chart to display the bandwidth at that specific time in a tooltip.



- *User Overview*: Displays the top five high risk users, including their combined blocked/total sessions and the total number of blocked sessions per user.



- *Devices*: Displays the blocked and allowed session number of the devices. Mouse over the donut chart to display the allowed session number or blocked session number, including the percentage in a tooltip.



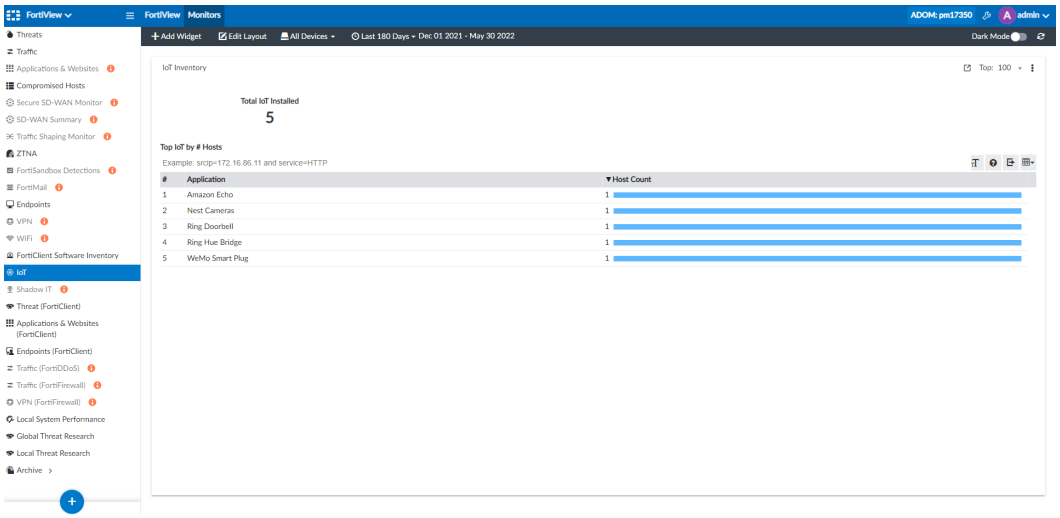
IoT visibility

A dashboard is added to *FortiView* > *Monitors* for internet of things (IoT) device activity in FortiAnalyzer. IoT devices include smart devices, such as Amazon Echo.

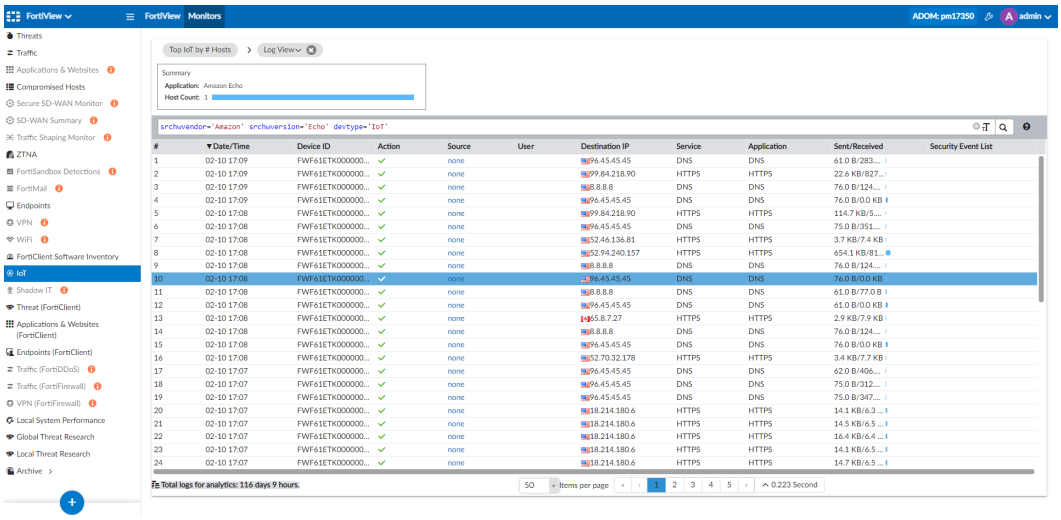
This feature requires an IoT detection service license on FortiGate. Disable `local-sig` on FortiGate and configure the FortiGate to send logs to FortiAnalyzer so they are visible on the IoT dashboard.

To use the IoT dashboard:

1. Go to *FortiView* > *Monitors* > *IoT*.
2. From the *Device* dropdown, select the devices to filter the dashboard, as needed.
3. From the *Time* dropdown, select the time period to filter the dashboard, as needed.
   The *IoT Inventory* widget displays the total number of IoT applications installed. This widget also includes a table of the *Top IoT by # Hosts*, which displays the top applications' name and host count.



4. In the *Top IoT by # Hosts* table, click a row to display the related traffic logs for that application.



Traffic shaping charts - 7.2.1

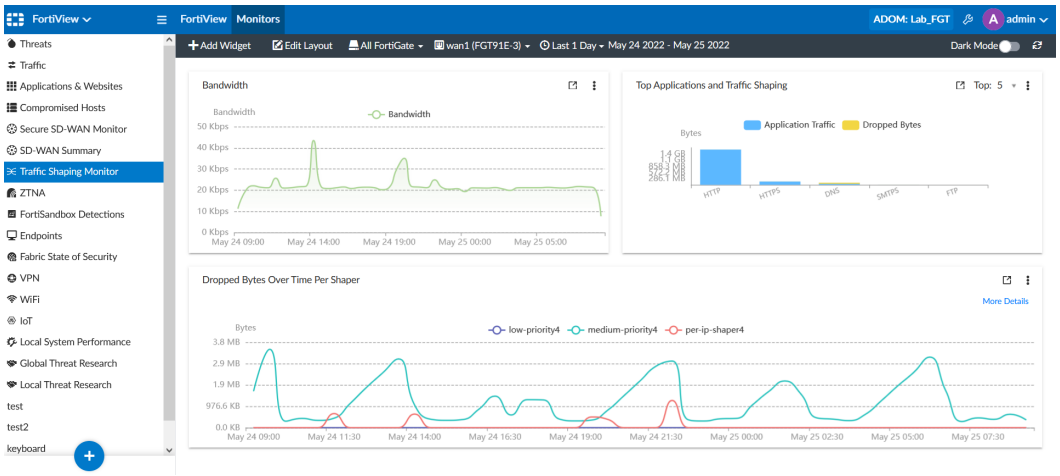
The *Traffic Shaping Monitor* dashboard is added to *FortiView* > *Monitors*.

This dashboard includes the following widgets:

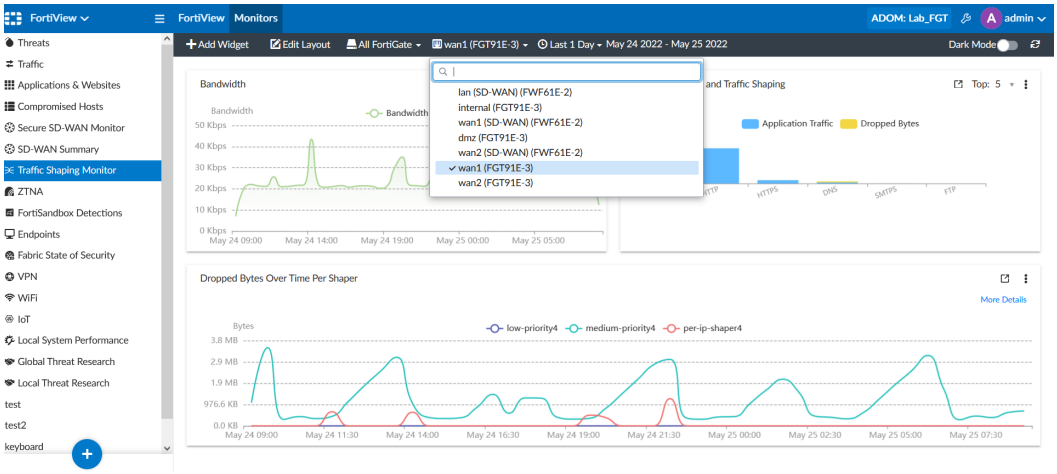
- *Bandwidth*: Displays the bandwidth of traffic shapers over time in a line chart.
- *Top Applications and Traffic Shaping*: Displays the traffic volume and dropped bytes for the top applications in a stacked bar chart.
- *Dropped Bytes Over Time Per Shaper*: Displays the dropped bytes for different traffic shapers on a selected interface over a period of time in a line chart.

To use the *Traffic Shaping Monitor*, you must configure per-IP traffic shaper and shared traffic shaper on the FortiGate device. Then, configure a traffic shaping policy. For more information, see the FortiGate Administration Guide.

To use these widgets, go to *FortiView* > *Monitors* > *Traffic Shaping Monitor*.

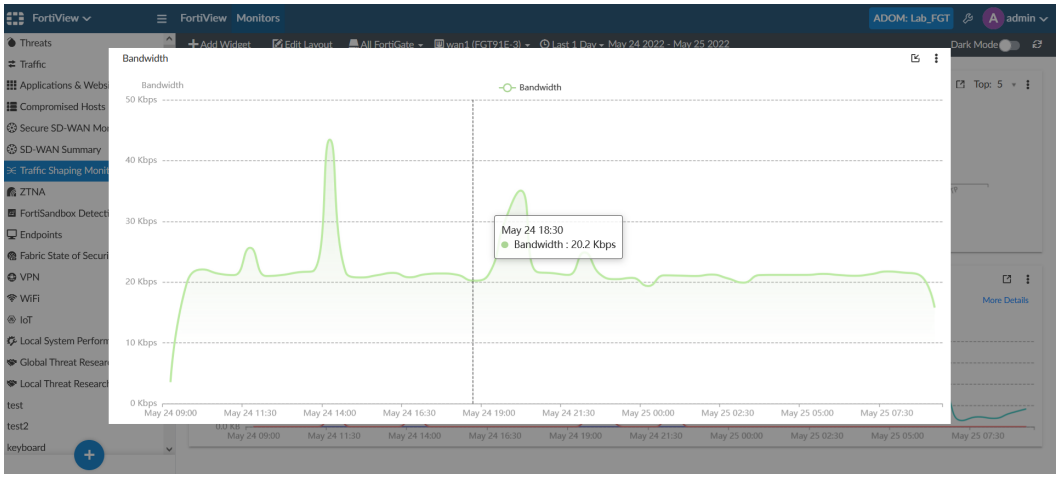


From the toolbar, select the devices, the traffic shaping interface, and a time range for the monitor. In the image below, the user selects *wan1 (FGT91E-3)* as the traffic shaping interface.



To use the *Bandwidth* widget:

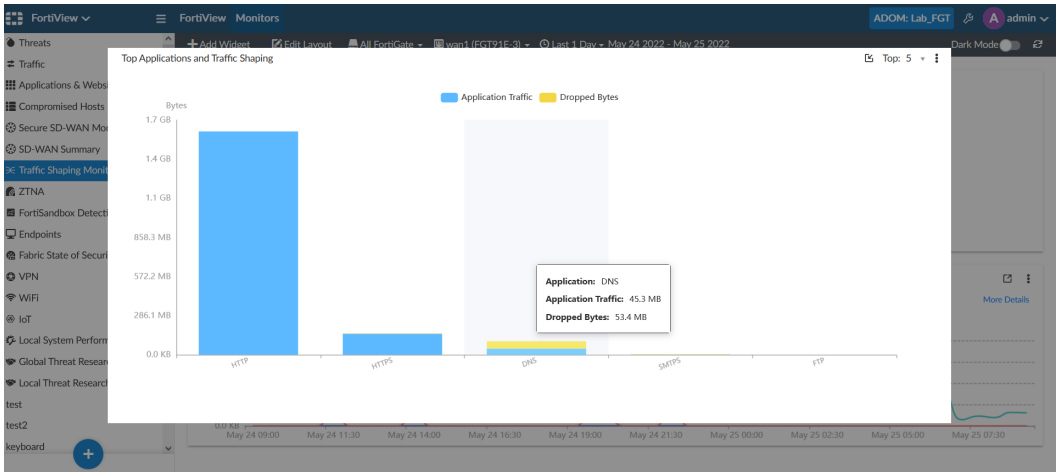
1. To display the bandwidth at a specific time in a tooltip, mouse over the line chart.



You can also click the bandwidth icon in the legend to hide/show the corresponding line in the chart.

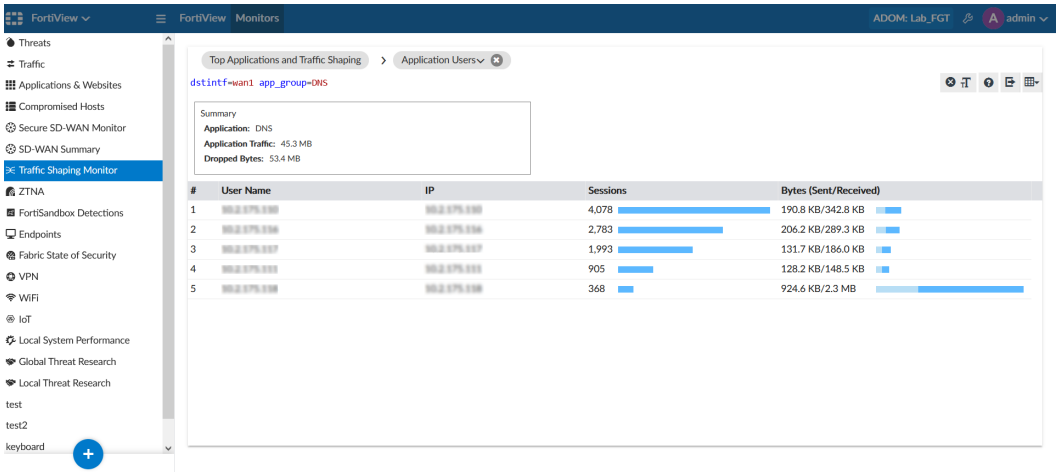
To use the *Top Applications and Traffic Shaping* widget:

1. From the *Top* dropdown, select the number of top applications (5/10/15/20) to display in the widget .
   The widget displays the top five applications by default.
2. To display a summary of application traffic and dropped bytes in a tooltip, mouse over the stacked bar chart.



Application Traffic and *Dropped Bytes* can be hidden/shown in the bar chart by click the corresponding icon in the legend.

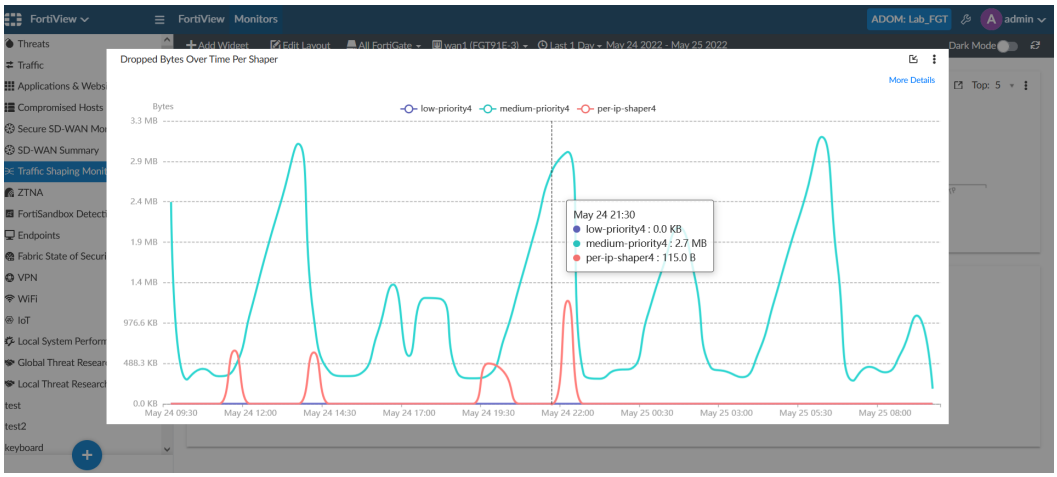
3. To display the *Application Users* table view, click a bar in the chart.
   This view includes a summary of the application traffic, including the number of sessions and bytes (sent/received) by user.



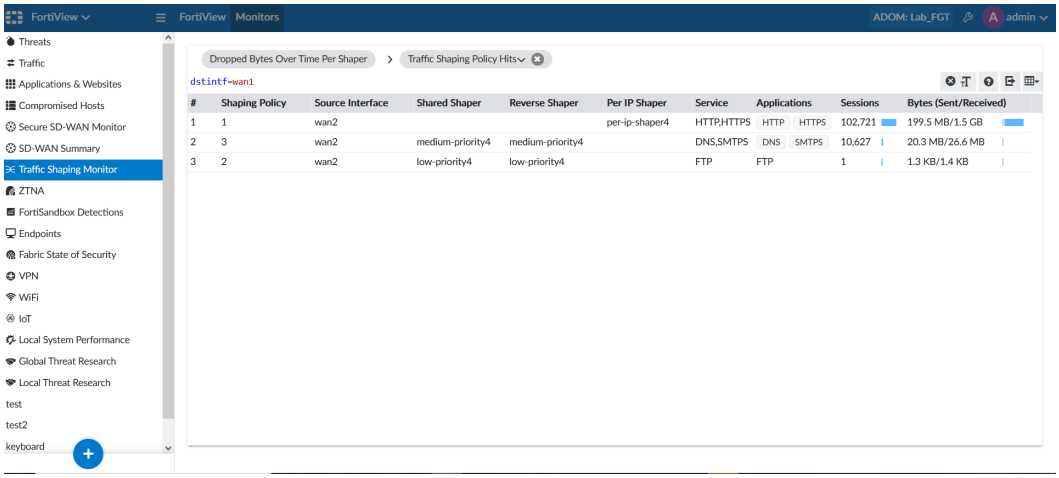
4. To return to the widget, click *Top Applications and Traffic Shaping*.

To use the *Dropped Bytes Over Time Per Shaper* widget:

1. To display a summary of dropped bytes per shaper in a tooltip, mouse over the line chart.



2. Click a shaper in the legend to hide/show it in the line chart.
   Greyed-out shapers in the legend are hidden in the line chart.
3. Click *More details* to display the *Traffic Shaping Policy Hits* table view.
   This table includes the total sessions and bytes (sent/received) by shaping policy.

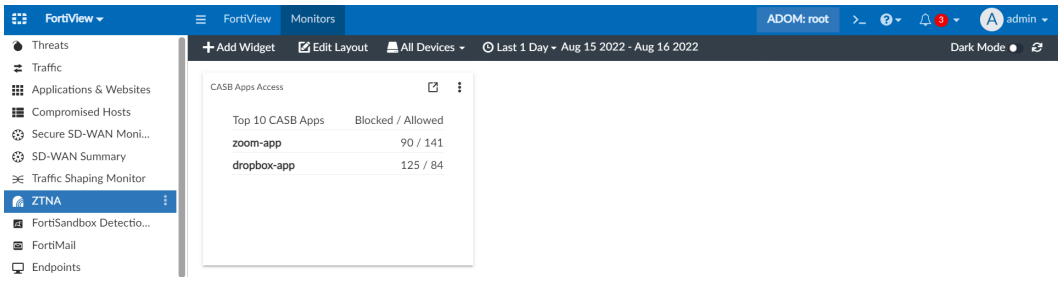


4. To return to the chart, click *Dropped Bytes Over Time Per Shaper*.
   Note that shared shapers, reverse shapers, and per-ip shapers are supported in this widget.

CASB Apps Access widget - 7.2.1

The new *CASB Apps Access* widget is added in *FortiView > Monitors > ZTNA*.

This widget lists the top 10 inline CASB applications, including a count of the *Blocked / Allowed* sessions per application. The CASB application name in this chart is the "`saasname`" in ZTNA traffic logs.



Auto-refresh on FortiSoC dashboard elements - 7.2.2

An auto-refresh dropdown is added to all FortiSoC dashboard, including *Playbooks*, *Incidents*, and *Events*. From each dashboard toolbar, the auto-refresh interval can be set to:

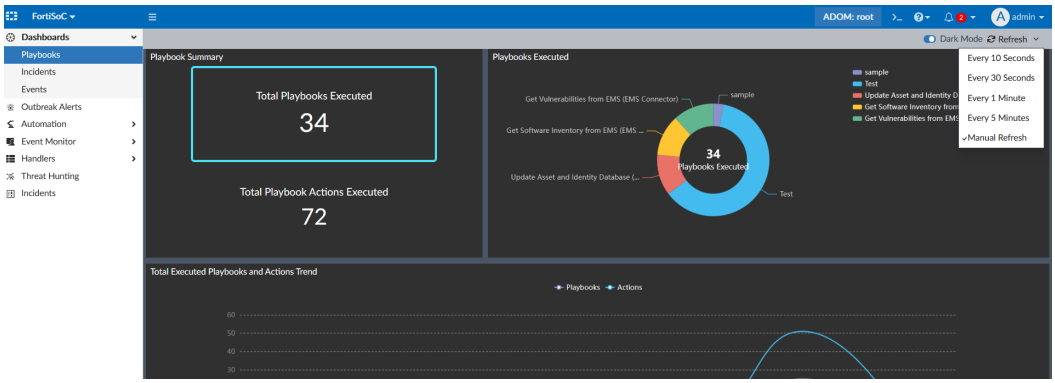
- *Every 10 Seconds*
- *Every 30 Seconds*
- *Every 1 Minute*
- *Every 5 Minutes*
- *Manual Refresh*

By default, the auto-refresh interval is set to *Manual Refresh*. With this setting selected, you must click *Refresh* in the toolbar to refresh the dashboard when needed.

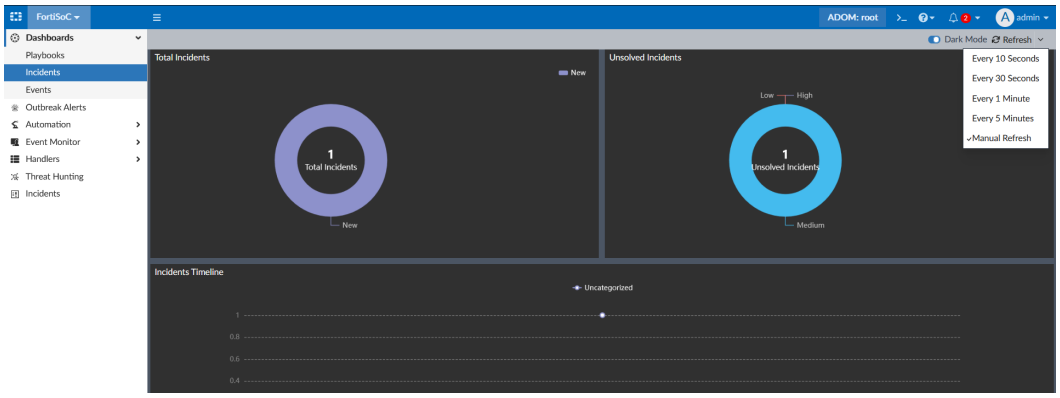
When another auto-refresh interval is selected, the dashboard will automatically refresh at the interval time. Alternatively, you can click *Refresh* to refresh the dashboard before the interval time is reached.

See below for images of the auto-refresh dropdown in the FortiSoC dashboards:

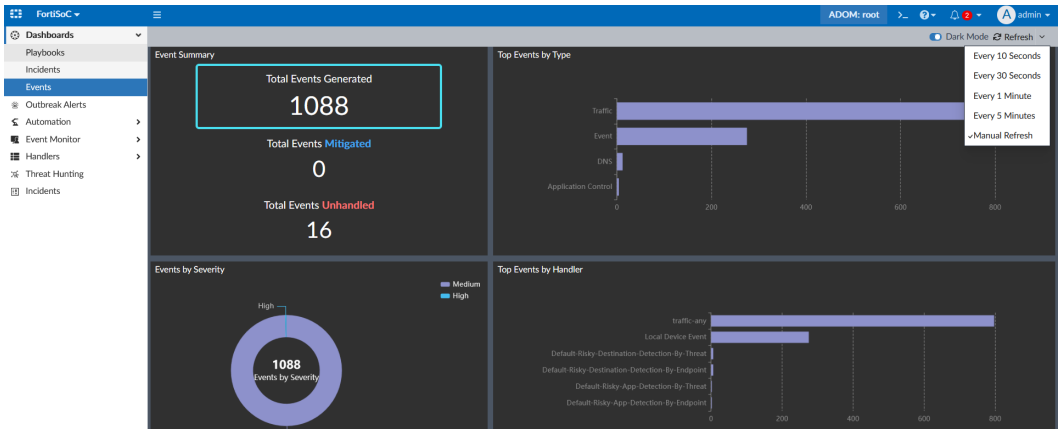
- *FortiSoC > Dashboards > Playbooks*



- *FortiSoC > Dashboards > Incidents*



- *FortiSoC > Dashboards > Events*



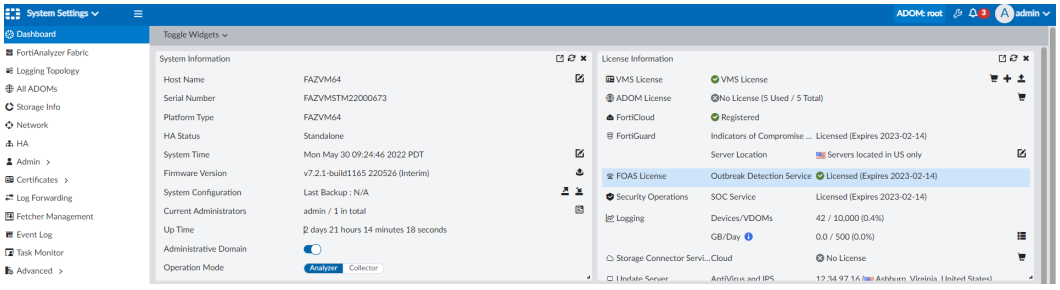
Others

This section lists the new features added to FortiAnalyzer for other topics related to security operations:

- Rename Outbreak Alerts Service to Outbreak Detection Service on page 55

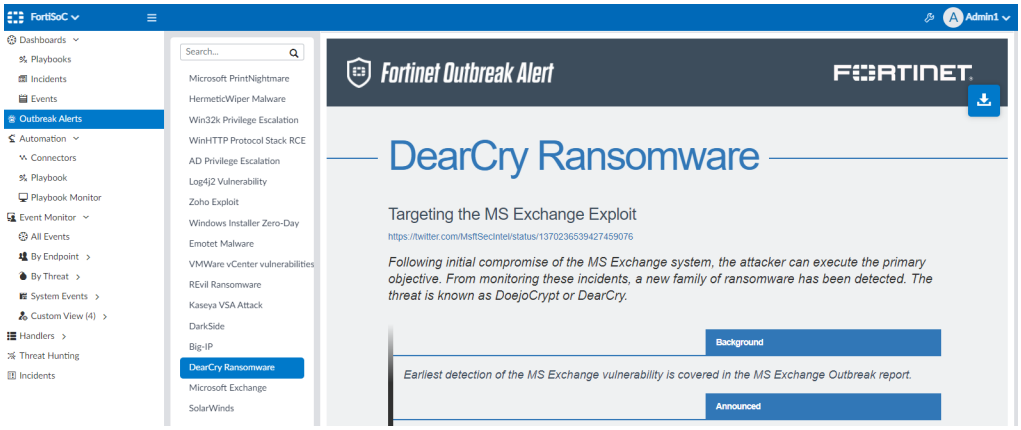
Rename Outbreak Alerts Service to Outbreak Detection Service

The Outbreak Alerts Service in FortiAnalyzer is renamed to Outbreak Detection Service. See examples from the GUI and CLI below.



```
FAZVM64 # dia license list
Name       Status          Expiry       Description
-------------------------------------------------------------------
PBDS       Valid           2023-02-14   post breach detection
SCPC       No License      N/A          cloud storage service
SOAR       Valid           2023-02-14   SOAR and SIEM bundle service
FOAS       Valid           2023-02-14   FAZ Outbreak Detection Service
```

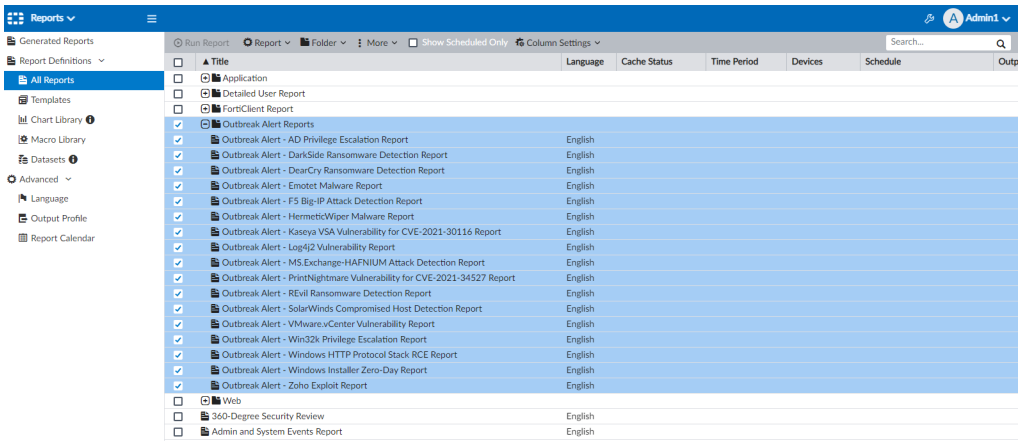
There is no change to functionality for this service. The FortiAnalyzer Outbreak Detection Service is a licensed feature that allows FortiAnalyzer administrators to view outbreak alerts and automatically download related event handlers and reports from FortiGuard. When FortiAnalyzer has a valid license for the Outbreak Detection Service, outbreak alerts from Fortinet are displayed in *FortiSoC* > *Outbreak Alerts* from any ADOM.



To view outbreak event handlers and reports:

1. Go to *FortiSoC* > *Handlers* > *Event Handler List*.
   Event handlers created by the FortiAnalyzer Outbreak Detection Service are displayed with the Outbreak Alert prefix.

2. Go to *Reports* > *All Reports*.
   The *Outbreak Alert Reports* folder includes available reports from the FortiAnalyzer Outbreak Detection Service.


Reports
Admin1
Generated Reports
Report Definitions
All Reports
Templates
Chart Library
Macro Library
Datasets
Advanced
Language
Output Profile
Report Calendar
Run Report
Report
Folder
More
Show Scheduled Only
Column Settings
Search...
Title
Language
Cache Status
Time Period
Devices
Schedule
Application
Detailed User Report
FortiClient Report
Outbreak Alert Reports
Outbreak Alert - AD Privilege Escalation Report English
Outbreak Alert - DarkSide Ransomware Detection Report English
Outbreak Alert - DearCry Ransomware Detection Report English
Outbreak Alert - Emotet Malware Report English
Outbreak Alert - F5 Big-IP Attack Detection Report English
Outbreak Alert - HermeticWiper Malware Report English
Outbreak Alert - Kaseya VSA Vulnerability for CVE-2021-30116 Report English
Outbreak Alert - Log4j2 Vulnerability Report English
Outbreak Alert - MS.Exchange-HAFNIUM Attack Detection Report English
Outbreak Alert - PrintNightmare Vulnerability for CVE-2021-34527 Report English
Outbreak Alert - REvil Ransomware Detection Report English
Outbreak Alert - SolarWinds Compromised Host Detection Report English
Outbreak Alert - VMware.vCenter Vulnerability Report English
Outbreak Alert - Win32k Privilege Escalation Report English
Outbreak Alert - Windows HTTP Protocol Stack RCE Report English
Outbreak Alert - Windows Installer Zero-Day Report English
Outbreak Alert - Zoho Exploit Report English
Web
360-Degree Security Review English
Admin and System Events Report English

Log and Report

This section lists the new features added to FortiAnalyzer for logs and reports:

- Logging on page 58
- Reports on page 69
- Others on page 93

Logging

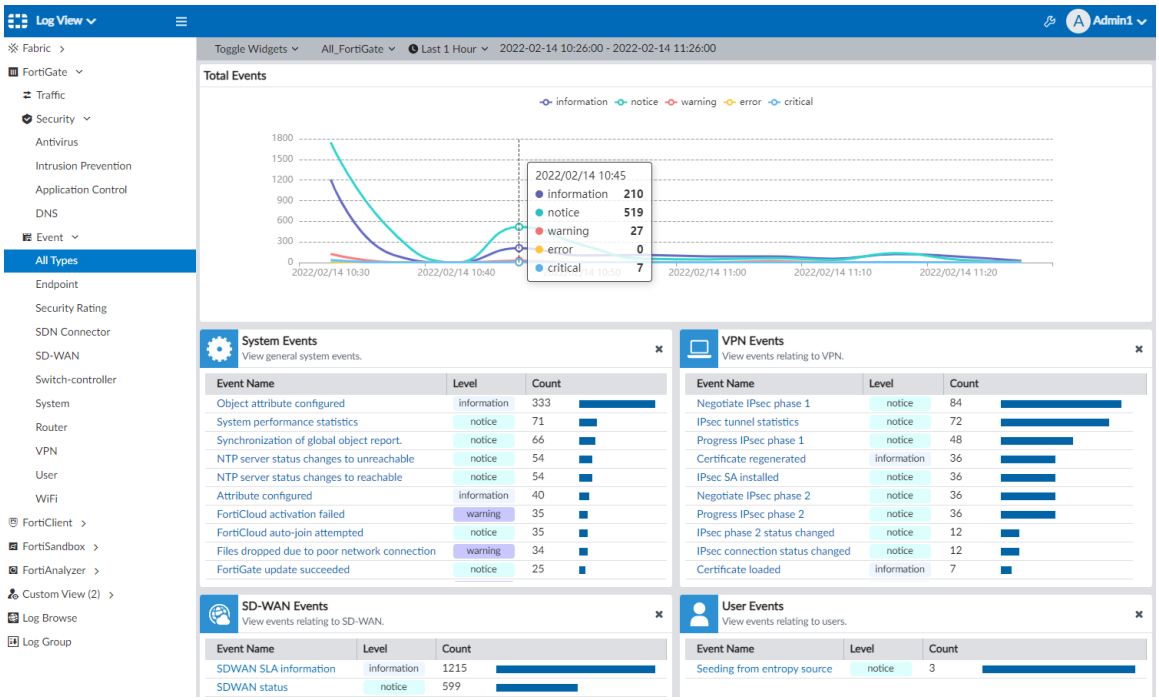
This section lists the new features added to FortiAnalyzer for logging:

- Summary dashboard for event logs on page 58
- Log caching enhancement on page 62
- FortiNDR logging and reporting enhancements 7.2.1 on page 64
- Security events consolidated page 7.2.1 on page 66

Summary dashboard for event logs

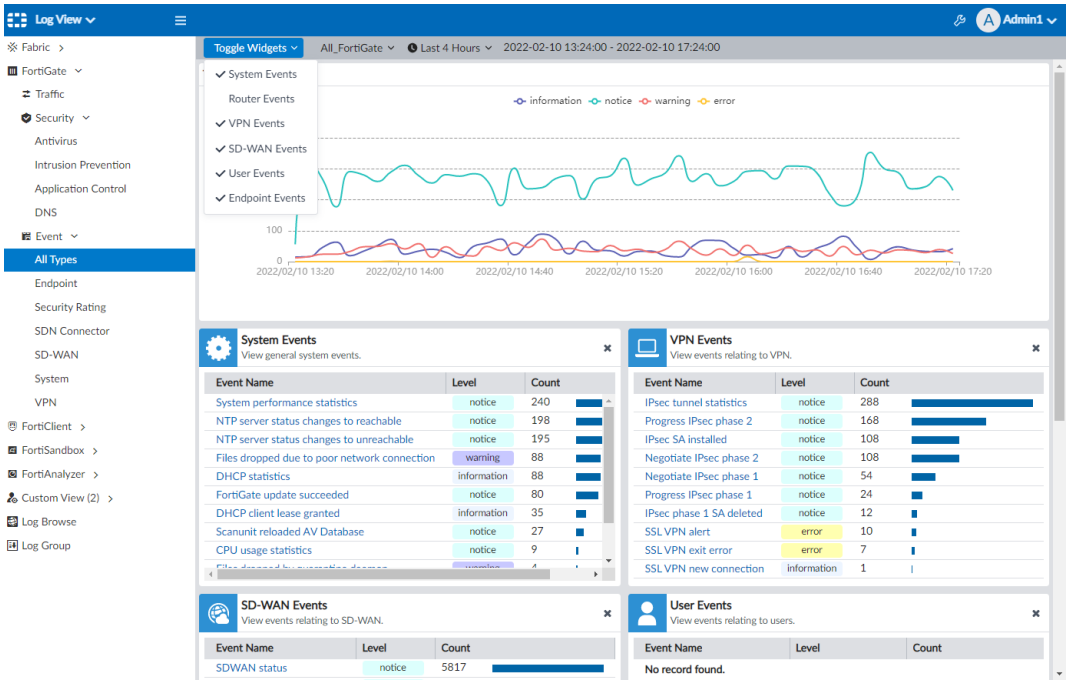
A new event log dashboard is added in *Log View* > *FortiGate* > *Events* > *All Types*. This dashboard displays total counts for the event logs by type, name, and level. You can choose which types of event logs display on the dashboard by toggling the widgets on/off. You can also filter the dashboard by FortiGate device(s) and time frame for the event logs.

The *Total Events* widget in this dashboard displays a line chart of event logs by level. Hover your cursor over the line chart to display a summary at that point.



To toggle widgets on the dashboard:

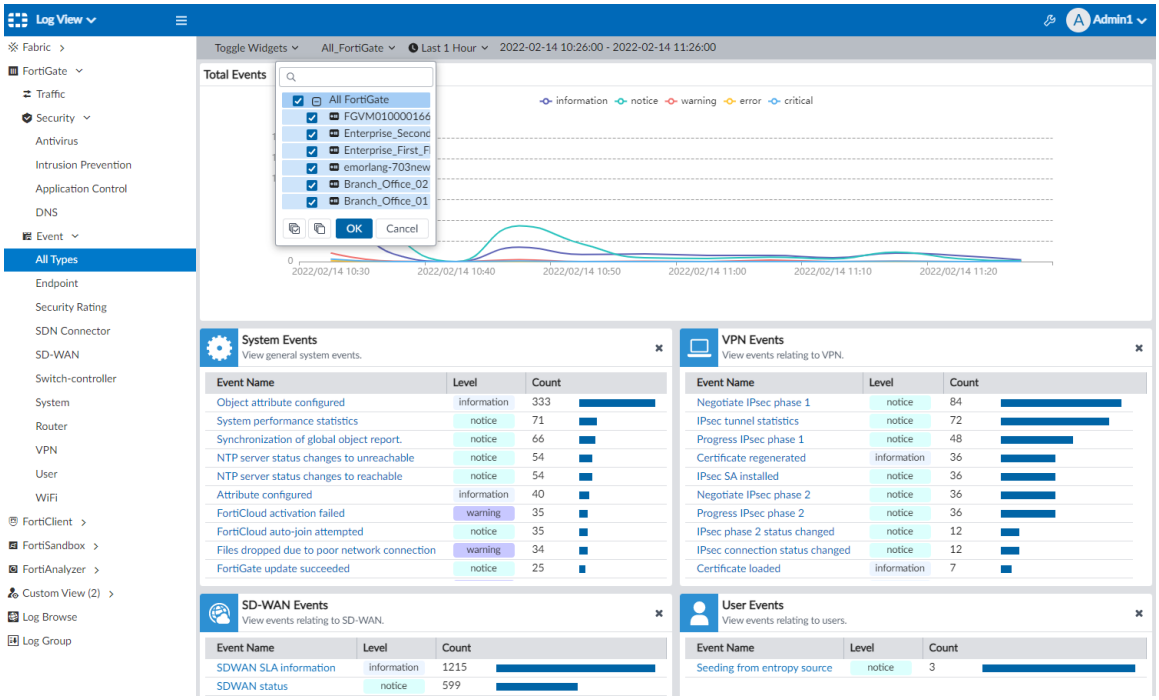
1. Go to *Log View* > *FortiGate* > *Event* > *All Types*.
2. From the *Toggle Widgets* dropdown, select the widgets to display on the dashboard. You can also toggle widgets off by clicking **X** on the widget.



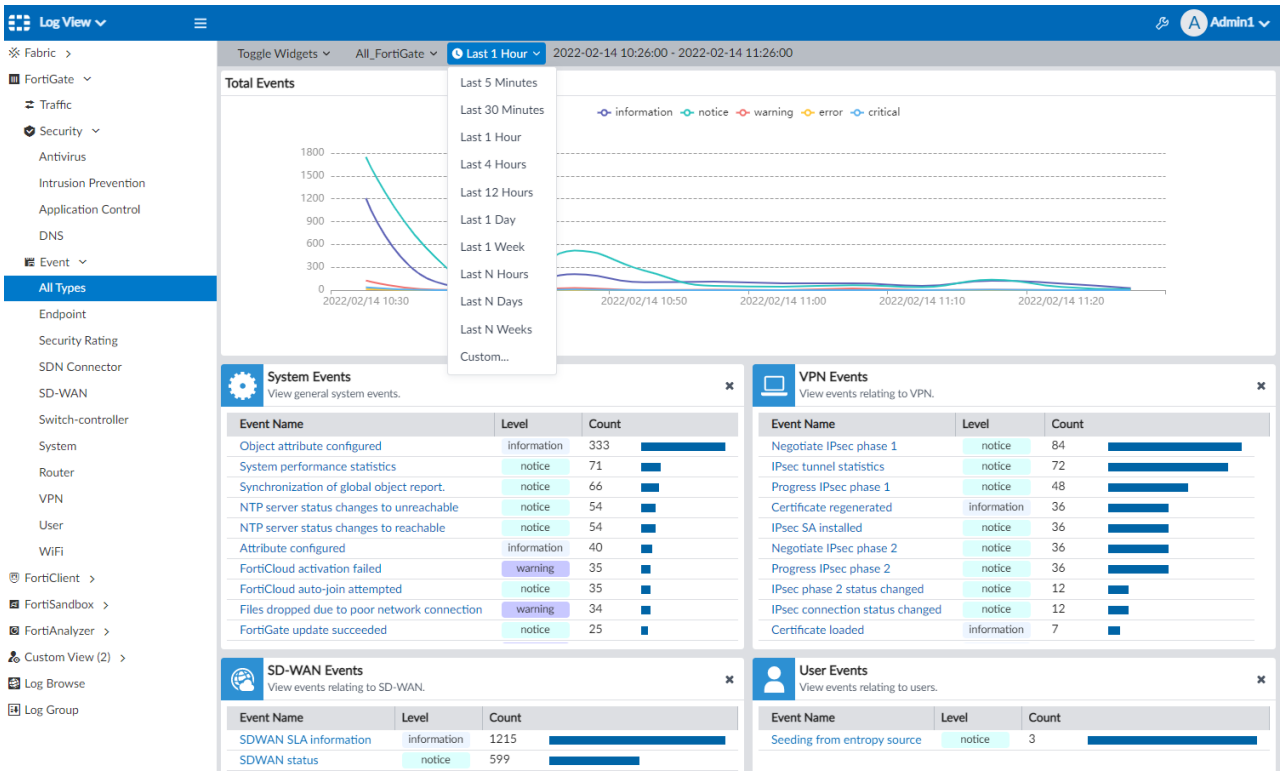
The *Total Events* widget cannot be toggled off.

To filter the dashboard:

1. From the device dropdown, select the FortiGate devices to include for the dashboard.
2. Click *OK*.

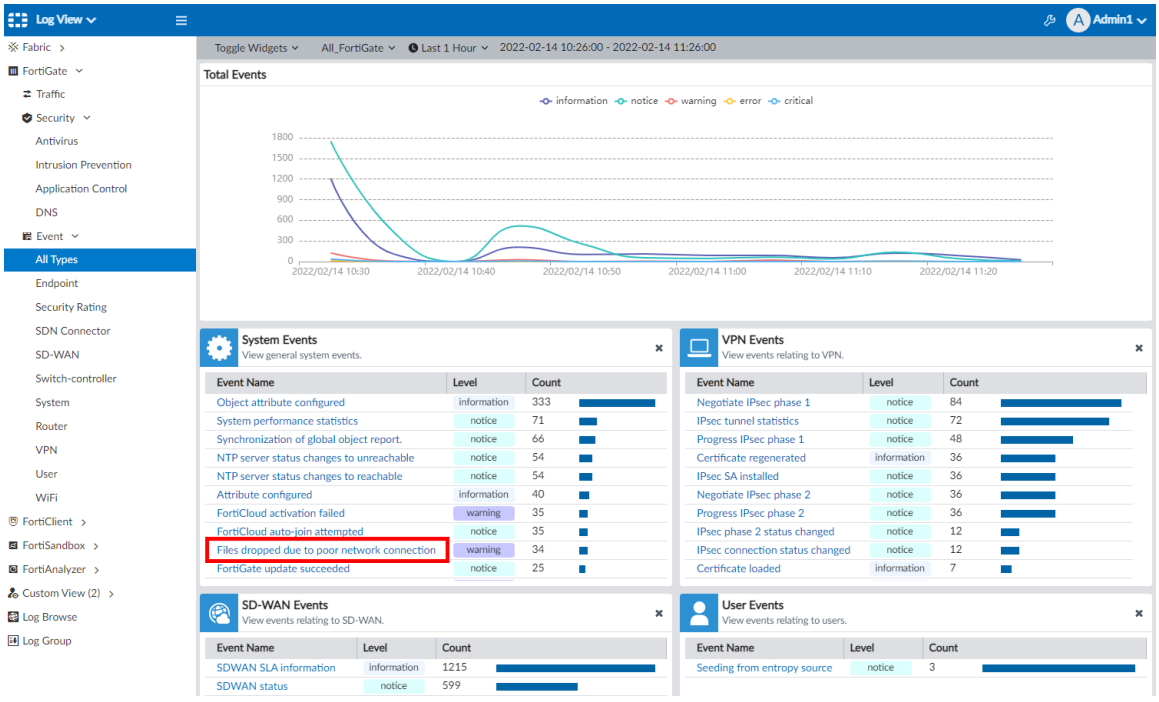


3. From the time dropdown, select the time frame for the dashboard.
   You can select *Custom...* to set a custom time frame.

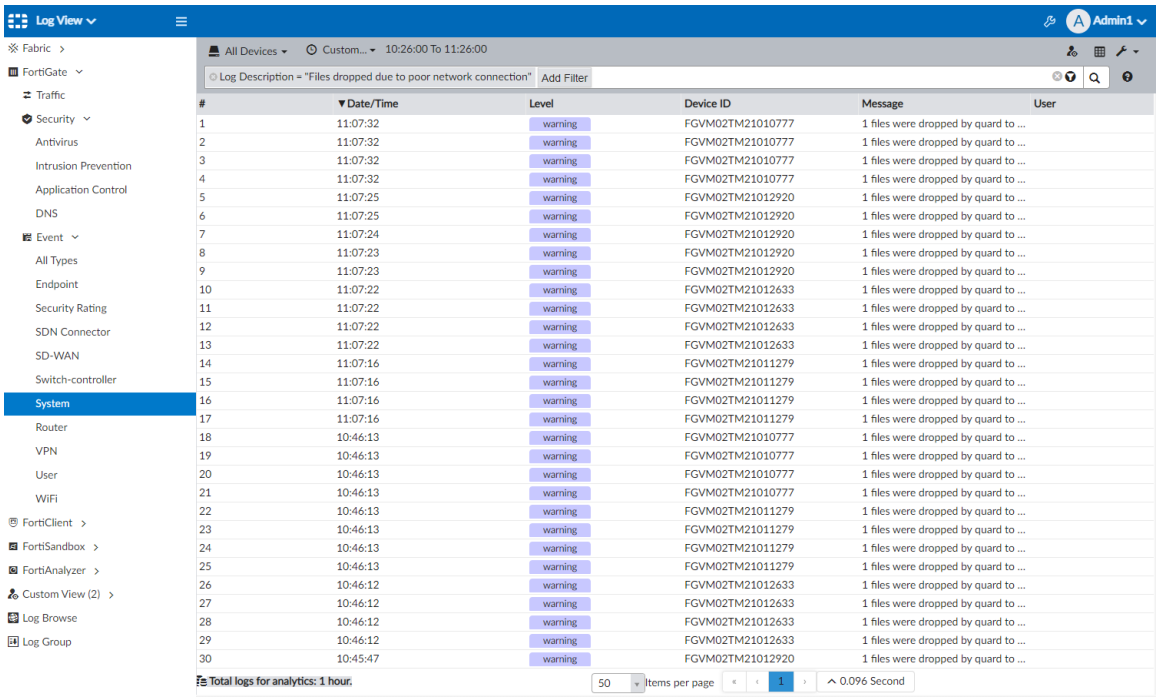


To open a list view of log messages from the dashboard:

1. To open a list view of related log messages, click an event name in a widget.



The list of event logs is filtered by the devices and time frame that you selected on the dashboard.



Log caching enhancement

FortiAnalyzer log caching mechanism in reliable mode is enhanced to prevent Fortigate log loss during connection interruptions.

Log sync logic guarantees that no logs are lost due to connection issues when reliable mode is enabled on the FortiGate device. If connection is lost between the FortiAnalyzer and FortiGate device, logs will be cached and sent to FortiAnalyzer once the connection resumes.

Reliable mode is disabled by default on FortiGate devices.

To configure the FortiGate device:

1. Configure the FortiGate device to send logs to FortiAnalyzer.
2. In the FortiGate CLI, enter the following commands to confirm *reliable* is enabled:

```
config log fortianalyzer2 setting
show
```

For example:

```
config log fortianalyzer2 setting
show
config log fortianalyzer2 setting
   set status enable
   set server "10.2.169.54"
   set serial "FAZ-VM0000000001"
   set upload-option realtime
   set reliable enable
```

```
end
```

3. In the FortiGate CLI, enter the following commands to confirm the value of `logsync_enabled` is `1`:

```
diagnose test application fgtlogd 1
```

For example:

```
diagnose test application fgtlogd 1

faz2: global , enabled
   server=10.2.169.54, realtime=1, ssl=1, state=connected
   server_log_status=Log is allowed.,
   src=, mgmt_name=FGh_Log_root_10.2.169.54, reliable=1, sni_prefix_type=none,
   required_entitlement=none, region=ca-west-1,
   logsync_enabled:1, logsync_conn_id:131071, seq_no:257
      status: ver=6, used_disk=0, total_disk=0, global=0, vfid=0 conn_verified=Y
      SNs: last sn update:2097 seconds ago.
         Sn list:
         (FAZ-VM0000000001,age=2097s)  (FAZ-VMJY00000004,age=2097s)
      queue: qlen=0.
filter: severity=6, sz_exclude_list=0
```

To confirm cached logs are sent when connection is lost/resumed between FortiGate and FortiAnalyzer:

In this example, the FortiGate device has already been configured according to the steps above. When connection is lost between the FortiGate and FortiAnalyzer device, logs are cached on the FortiGate until connection resumes. Once connection resumes, the cached logs are sent to the FortiAnalyzer.

1. While connection between the FortiGate and FortiAnalyzer is established, check the log sequence number on the OFTP connection.

   In the FortiAnalyzer CLI, enter the following command:

```
diagnose test application oftpd 3
#  DEVICE  CONN  HOSTNAME  IP  UPTIME  IDLETIME  #PKTS
-------------------------------------------------------------------------------
     --
1  FGT40FTK20025663  131071: 257  FortiGate-40F  10.3.169.1  31m14s  4s  620
```

   The `CONN` column has been added to record the connection ID and log sequence number. In this example, the connection ID is `131071` and the sequence number is `257`.

2. When the connection between the FortiGate and FortiAnalyzer is lost, check the log sequence number on the OFTP connection.

   In the FortiAnalyzer CLI, enter the following command:

```
diagnose test application oftpd 3
#  DEVICE  CONN  HOSTNAME  IP  UPTIME  IDLETIME  #PKTS
-------------------------------------------------------------------------------
     --
1  FGT40FTK20025663  131071: 257  FortiGate-40F  10.3.169.1  35m14s  244s  620
```

   While the connection is lost, logs generated on the FortiGate device will be stored in its memory queue. The log sequence number on the OFTP connection will not increase. In this example, the log sequence number has remained at `257`.

3. When the connection between the FortiGate and FortiAnalyzer device resumes, check logs on the FortiGate device.

   In the FortiGate CLI, enter the following command:

```
diagnose test application fgtlogd 41

cache maximum: 100573388(95MB) objects: 37 used: 25788(0MB) allocated: 29440(0MB)

VDOM:root
```

```
Memory queue for: global-faz
   queue:
      num:0 size:0(0MB) total size:25788(0MB) max:100573388(95MB) logs:0
Confirm queue for: global-faz
   queue:
      num:25 size:17382(0MB) total size:25788(0MB) max:100573388(95MB) logs:81
Memory queue for: global-faz2
   queue:
      num:0 size:0(0MB) total size:25788(0MB) max:100573388(95MB) logs:0
Confirm queue for: global-faz2
   queue:
      num:12 size:8406(0MB) total size:25788(0MB) max:100573388(95MB) logs:40
```

The confirm queue on the FortiGate device shows all the logs that are waiting to be confirmed and cleared. Once the confirm queue displays 0, all of the cached logs have been sent to the FortiAnalyzer device.

4. Once the logs have been confirmed and cleared from the FortiGate device, check the log sequence number on the OFTP connection.
   In the FortiAnalyzer CLI, enter the following command:

```
diagnose test application oftpd 3
#  DEVICE  CONN  HOSTNAME  IP  UPTIME  IDLETIME  #PKTS
-------------------------------------------------------------------------------
    --
1  FGT40FTK20025663  131071: 308  FortiGate-40F  10.3.169.1  36m23s  6s  635
```

   Once the cached logs have been sent to the FortiAnalyzer device, the log sequence number increases. In this example, the log sequence number has increased to `308`.

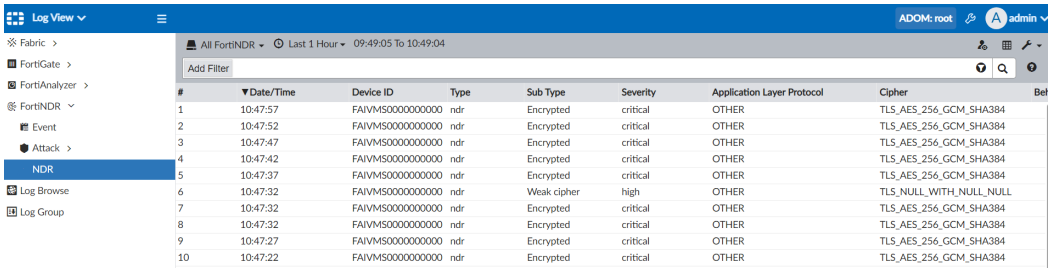
FortiNDR logging and reporting enhancements - 7.2.1

The following enhancements are introduced for FortiNDR devices:

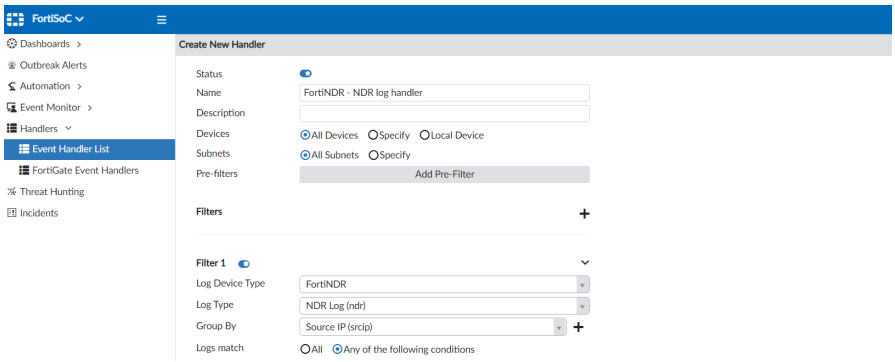
- In *Log View*, support is added for log type: *ndr*
- In *FortiSOC*, support is added for FortiNDR as log device type
- In *Reports*, the *FortiNDR Network Anomalies Report* and additional datasets are added

See below for more details.

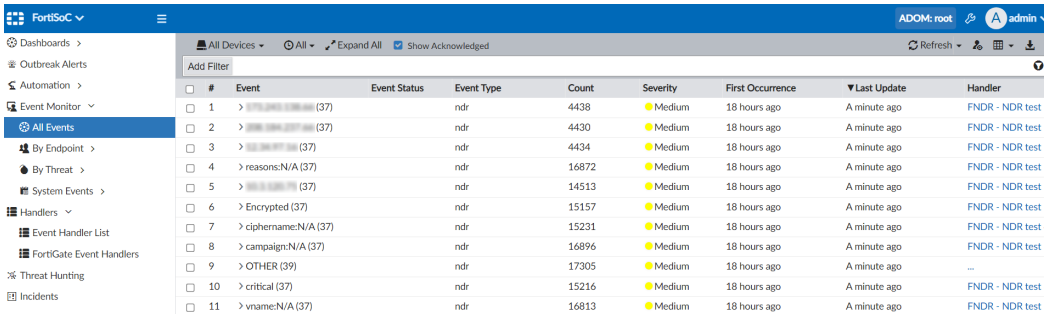
A new log type is added for the FortiNDR device. These logs can be found in *Log View* > *FortiNDR* > *NDR*.



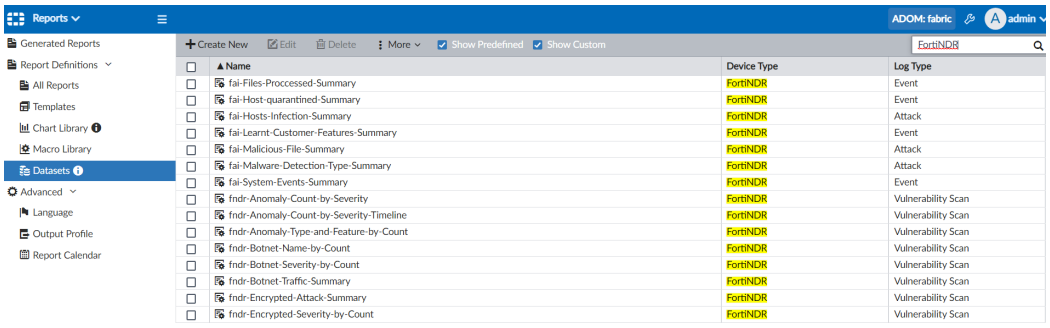
This log type is supported in event handlers. In *FortiSoC* > *Handlers* > *Event Handler List*, you create event handlers with *Log Type* = *NDR Log (ndr)* when the *Log Device Type* = *FortiNDR*.



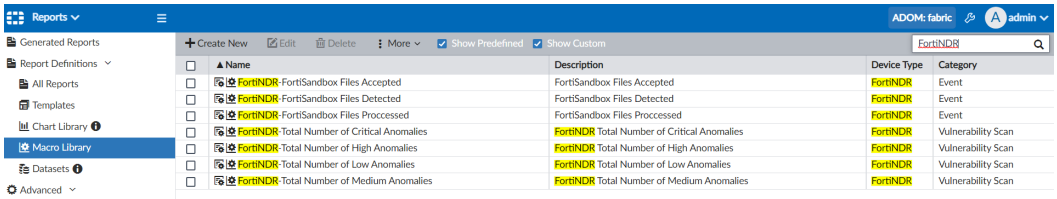
In *FortiSoC* > *Event Monitor* > *All Events*, the events generated by this handler will display with *Event Type* = *ndr*.



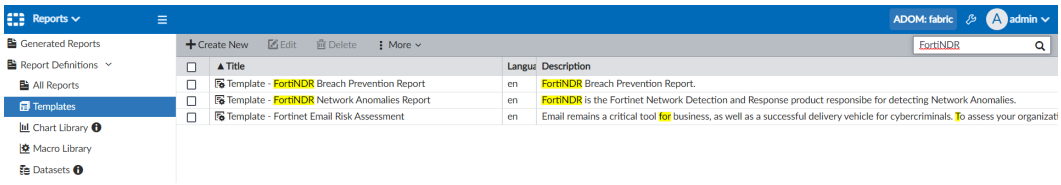
In *Reports* > *Report Definitions* > *Datasets*, new datasets are added for the FortiNDR device. These new datasets display in the table view with *Device Type* = *FortiNDR* and *Log Type* = *Vulnerability Scan*.



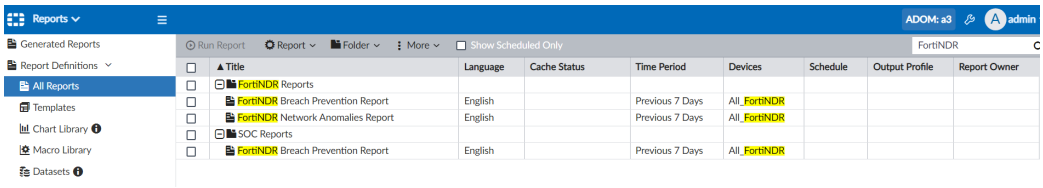
In *Reports* > *Report Definitions* > *Macro Library*, new macros are added for the FortiNDR device. These new macros display in the table view with *Device Type* = *FortiNDR* and *Category* = *Vulnerability Scan*.



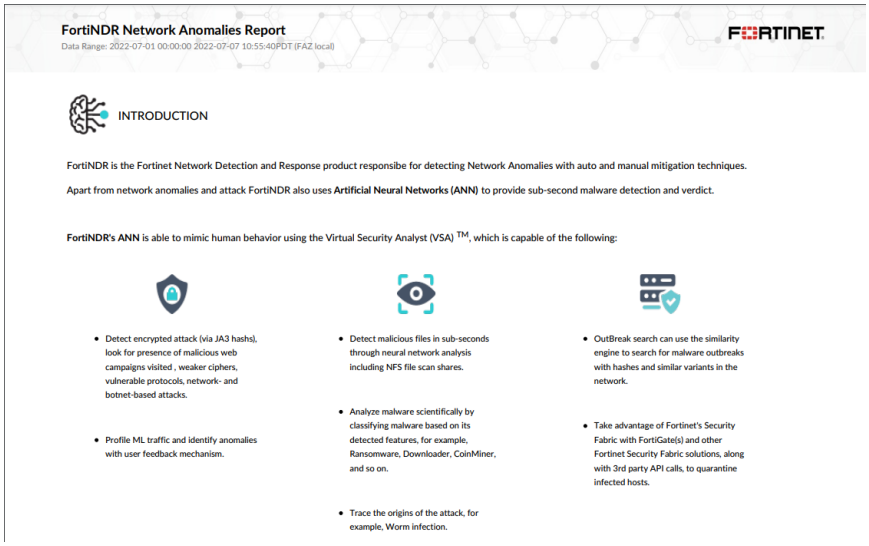
In *Reports* > *Report Definitions* > *Templates*, a new default report template is added: *Template - FortiNDR Network Anomalies Report*.



This template can be used to create a report. You can also use the default report in *Reports* > *Report Definitions* > *All Reports*.



Below is a sample of the *FortiNDR Network Anomalies Report* in PDF format.



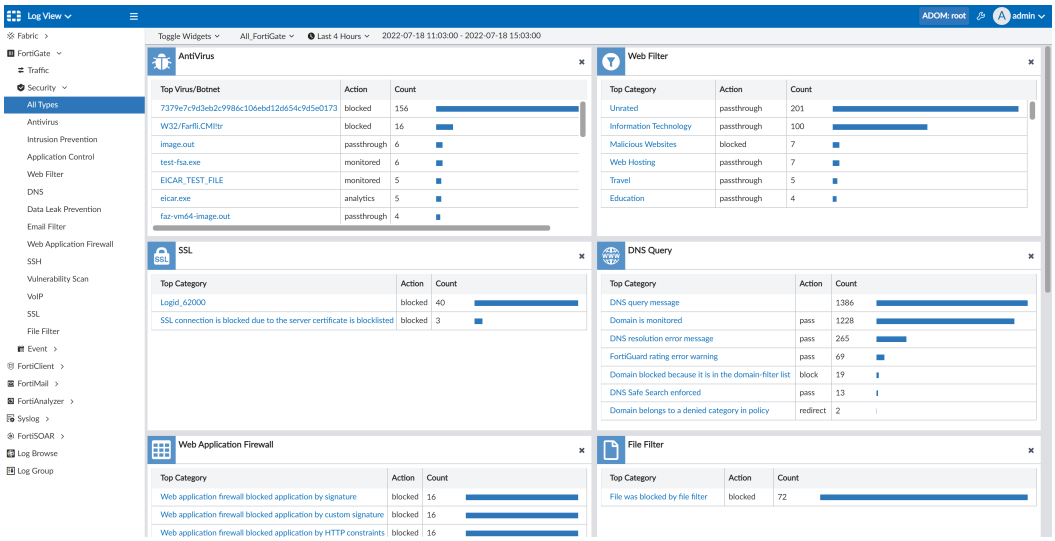
Security events consolidated page - 7.2.1

Security logs are consolidated in a new widget style page: *Log View* > *FortiGate* > *Security* > *All Types*.

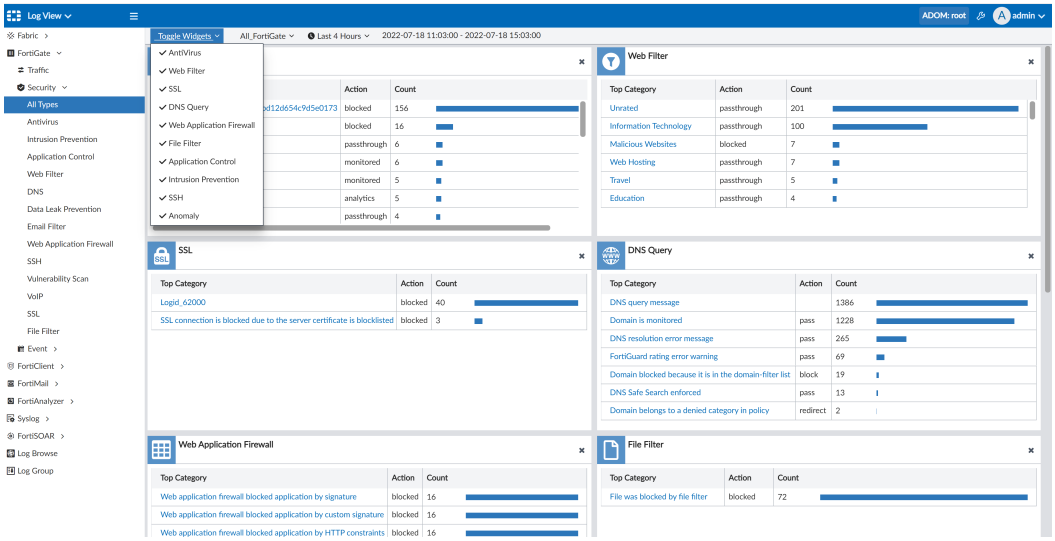
To simplify monitoring, security log subtypes such as *AntiVirus* and *Web Filter* are presented in individual widgets. Each widget lists the most frequent events by count in descending order. By clicking any consolidated entry, you can drill-down to the exact log entries.

To view the security logs dashboard:

1. Go to *Log View* > *FortiGate* > *Security* > *All Types*.

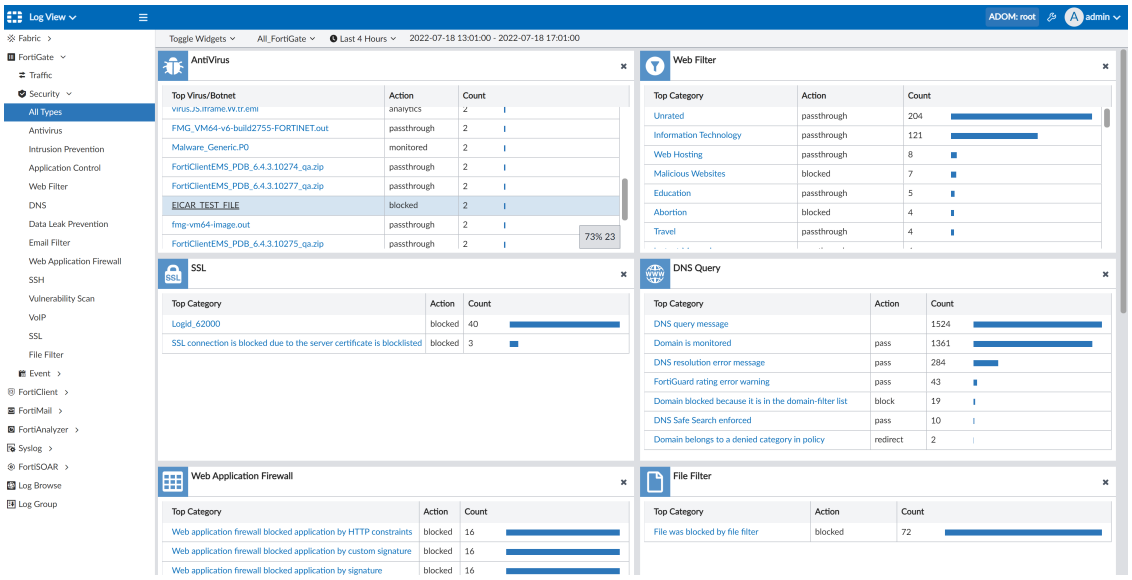


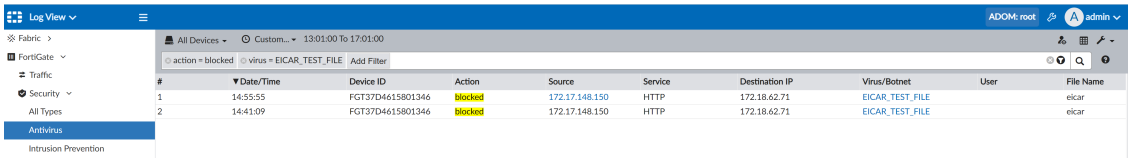
2. From the *Toggle Widgets* dropdown, select the widgets to display on the dashboard. You can also toggle widgets off by clicking **X** on the widget.



3. Click an entry in the following widgets to display the details in the security view.
   - *AntiVirus*
   - *Web Filter*
   - *Web Application Firewall*
   - *Application Control*
   - *Intrusion Prevention*
   - *Anomaly*

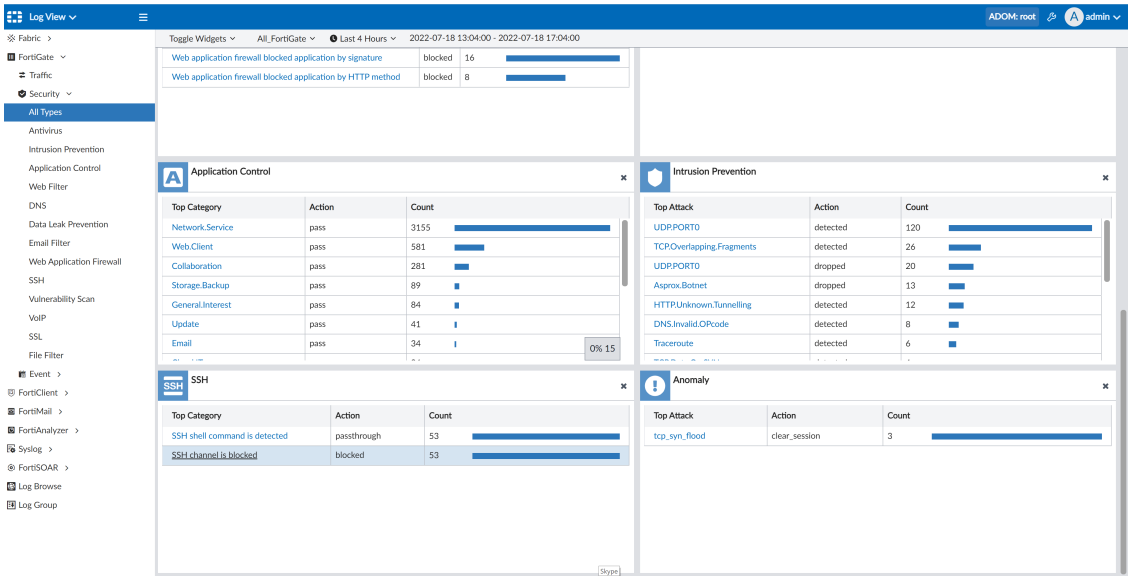
   See the example below that drills down from the *AntiVirus* widget.

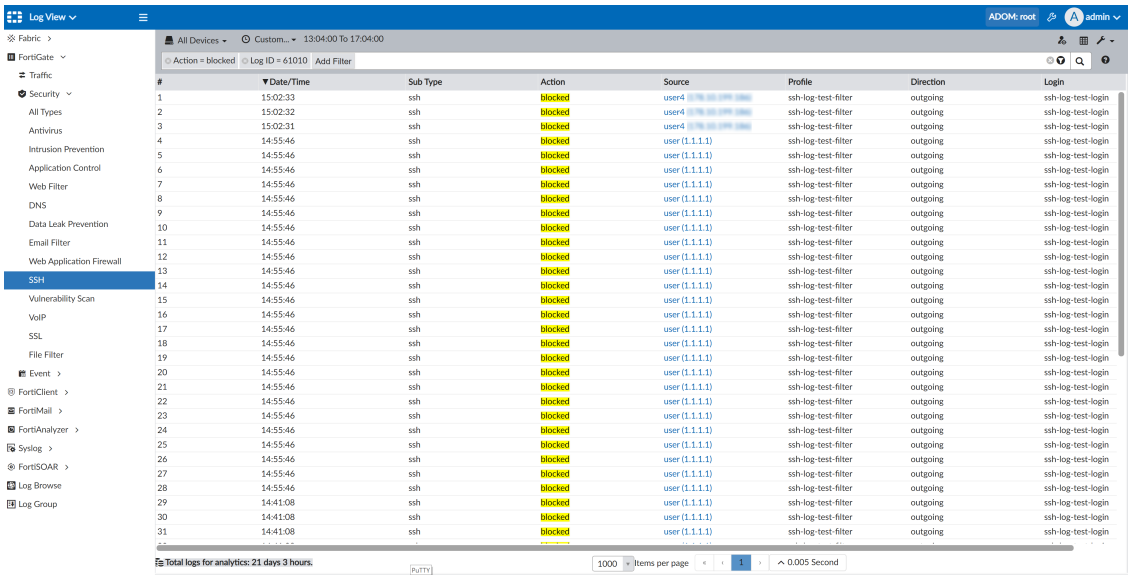




4. Click an entry in the following widgets to display the event view filtered by the Log ID for details.
   - *DNS Query*
   - *File Filter*
   - *SSH*
   - *SSL*

   See the example below that drills down from the *SSH* widget.





Reports

This section lists the new features added to FortiAnalyzer for reports:

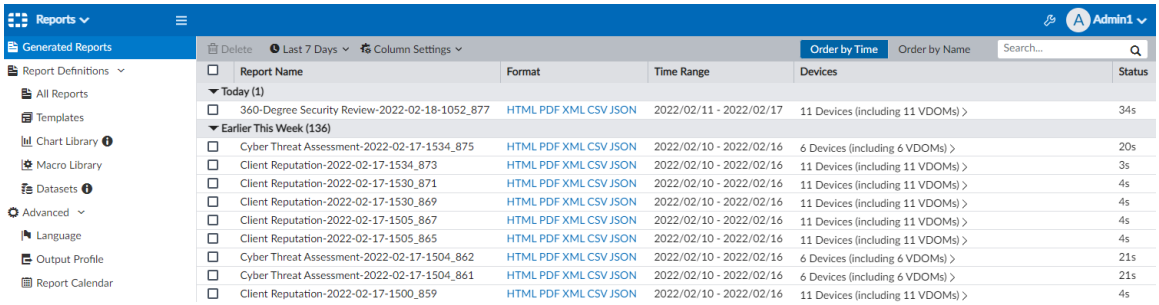
- Report in JSON format on page 69
- Report cache control on page 70
- Upgrade report editor on page 71
- Improve data visualization for the web usage report on page 74
- 360 Security Report on page 76
- VPN report update 7.2.1 on page 78
- Application risk and control report update 7.2.1 on page 82
- Bandwidth and applications report update 7.2.1 on page 84
- Security events and incidents summary report update 7.2.1 on page 85
- High bandwidth application usage report update 7.2.1 on page 87
- Cyber-bullying indicators report update 7.2.1 on page 89
- Self-harm and risk indicators report update 7.2.2 on page 91

Report in JSON format

The JSON format is now available for reports.

To download a report in the JSON format:

1. After running the report, go to *Reports* > *Generated Reports*.
2. In the *Format* column for the report, click *JSON*.



Report cache control

Admins can now control caching for individual reports in the report settings.

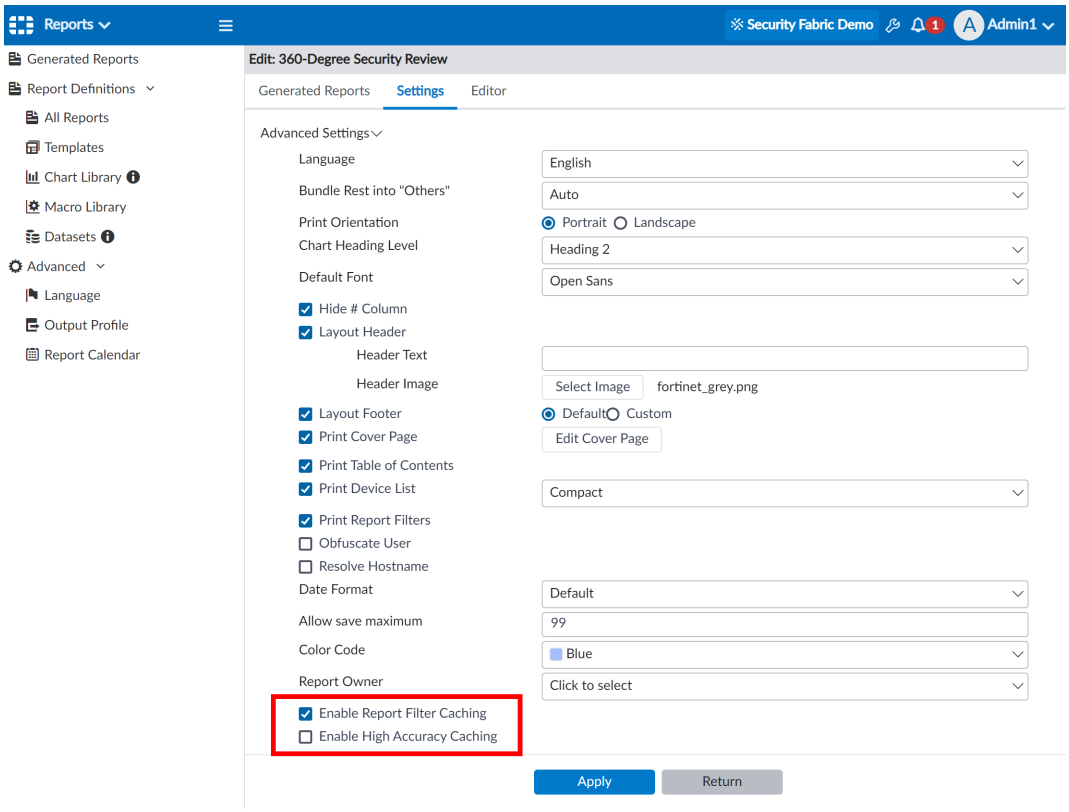
To control the report cache for an individual report:

1. Go to *Reports* > *All Reports*, and double-click the report to edit.
2. Go to the *Settings* tab.
3. Expand the *Advanced Settings* for the report.
4. Configure the following options to control the report cache:

Enable Report Filter Caching	Select to accelerate processing speed when generating multiple reports. In this case, all filters are applied when querying the hcache table. This is the default. De-select to improve report accuracy. In this case, the filters are put inside the hcache to increase data accuracy. However, this will also impact performance.

Enable High Accuracy Caching	Select to increase the maximum hcache rows, increasing data accuracy.
	You can show, set, or reset the maximum number of rows for high-accuracy hcache by entering the following command in the FortiAnalyzer CLI:
	`diagnose sql config hcache-max-high-accu-row [reset | set <integer>]`
	De-select to use the default number of hcache rows, increasing system performance. This is the default.
	You can show, set, or reset the default number of hcache rows by entering the following command in the FortiAnalyzer CLI:
	`diagnose sql config hcache-max-rpt-row [reset | set <integer>]`

5. Click *Apply* to save the changes.



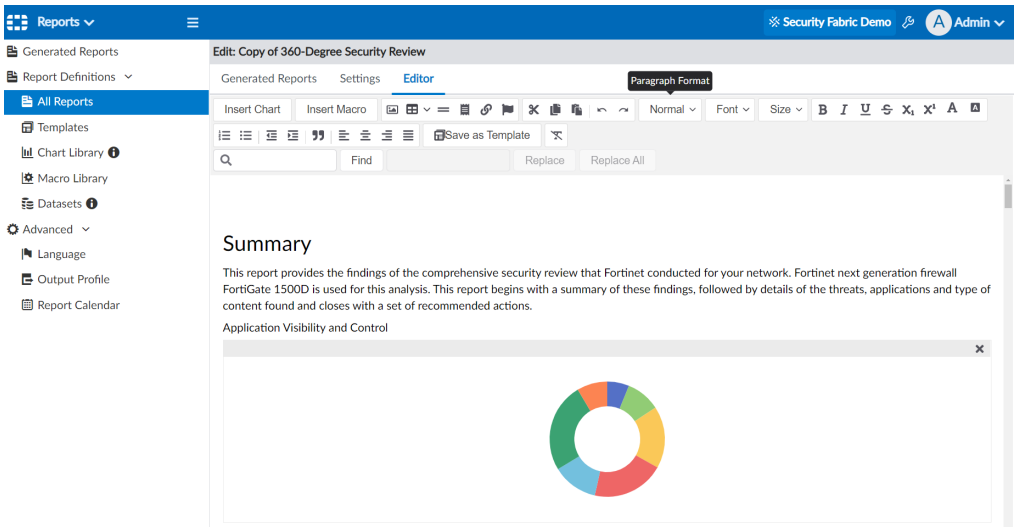
Upgrade report editor

The report editor has been replaced with a custom rich text editor.

To use the report editor:

1. Go to *Reports* > *Report Definitions* > *All Reports*.
2. Right click a report and select *Edit*.
3. Go to the *Editor* tab.
   The *Editor* tab is also available when creating a new report.

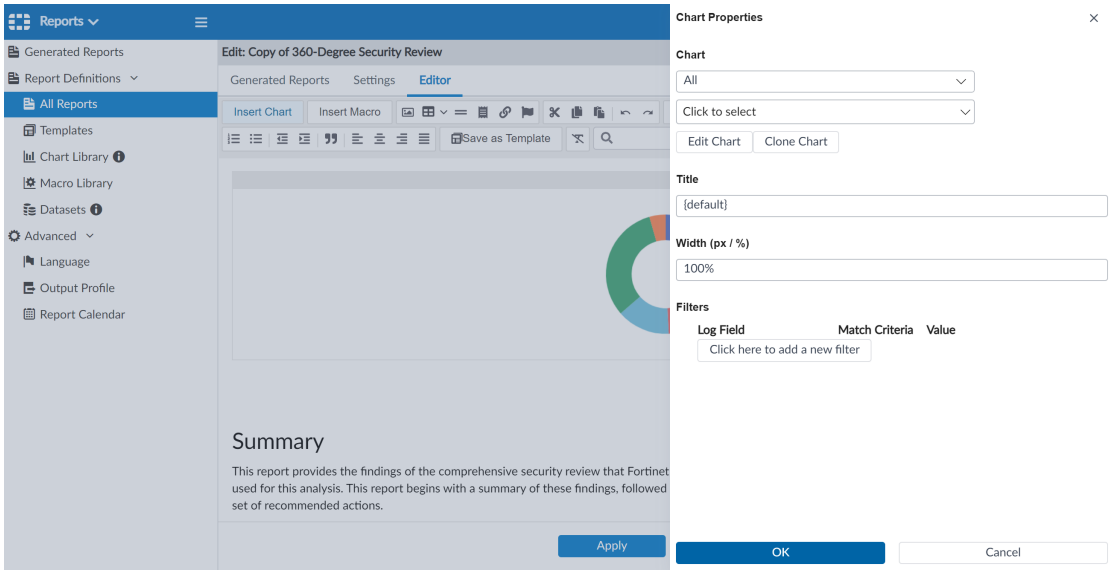
4. Mouse over options in the toolbar to view the related action.



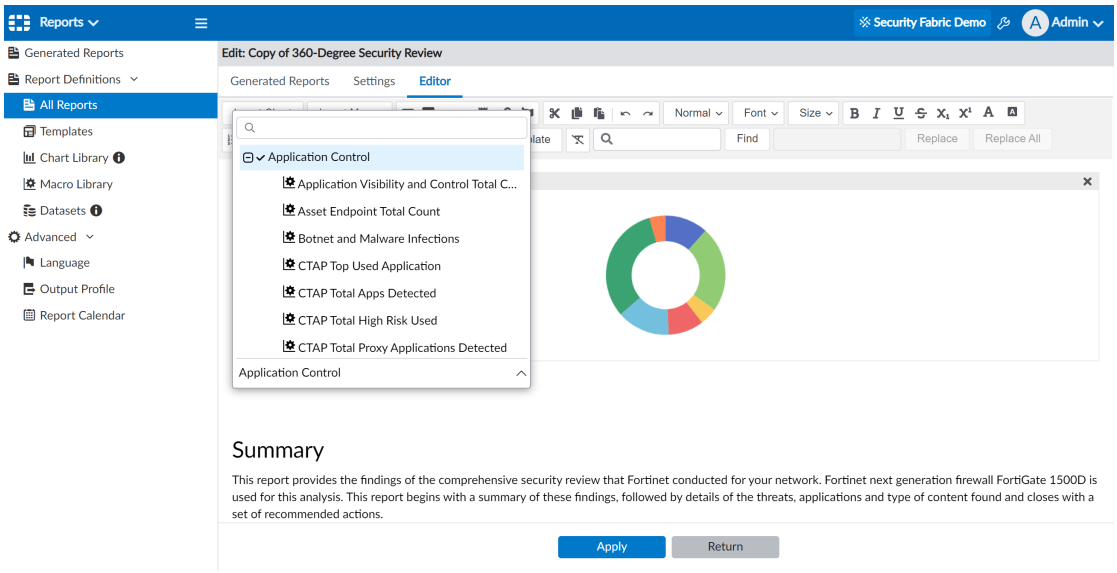
You can also use the following shortcuts in the editor:

- *CTRL+C* to copy text
- *CTRL+X* to cut text
- *CTRL+V* to paste copied or cut text
- *CTRL+Z* to undo
- *CTRL+Y* to redo
- *CTRL+B* to apply bold formatting
- *CTRL+I* to apply italic formatting
- *CTRL+U* to apply underline formatting

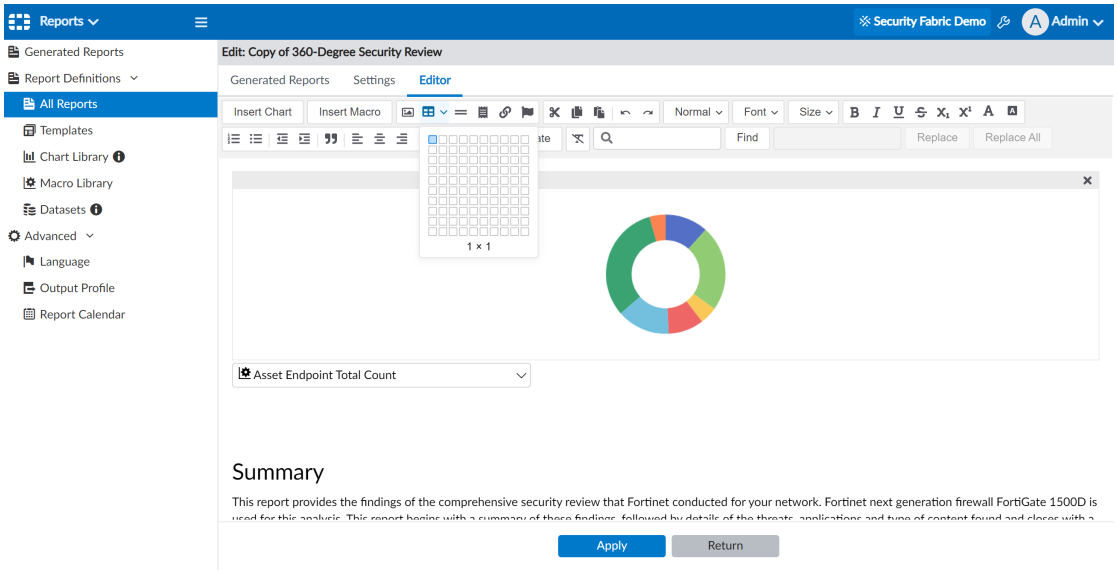
5. To add a chart in the report, click *Insert Chart*.
6. In the *Chart Properties* pane, select a chart, enter a title, adjust the width, and set the filters.
7. Click *OK*.



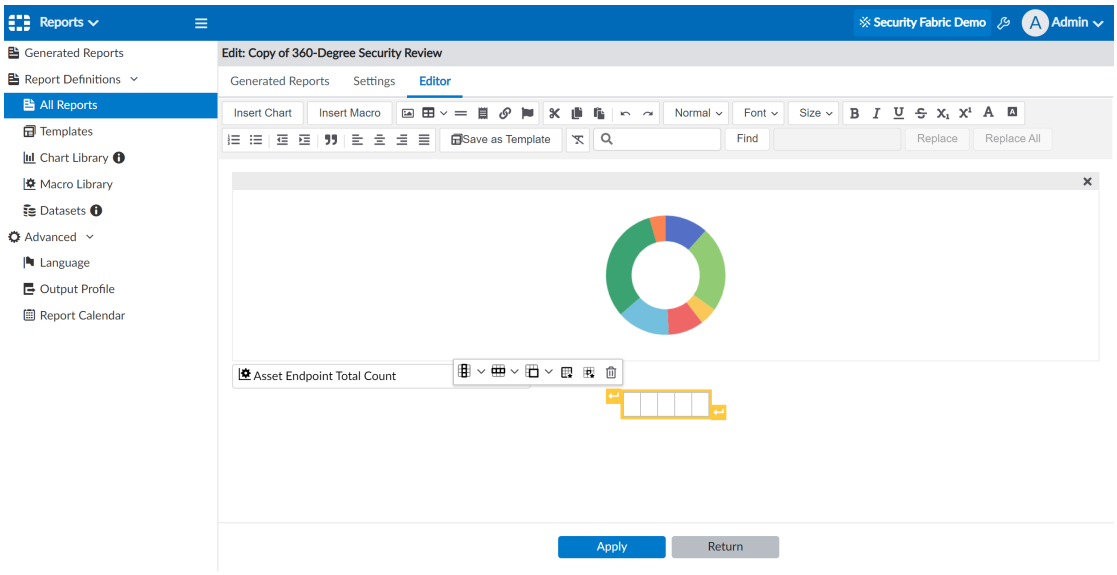
8. To add a macro in the report, click *Insert Macro*.
9. From the macro dropdown in the report, select a macro.
   You can delete the macro as though it is regular text by using the backspace key.



10. To add a table in the report, select the number of rows and columns from the insert table dropdown.



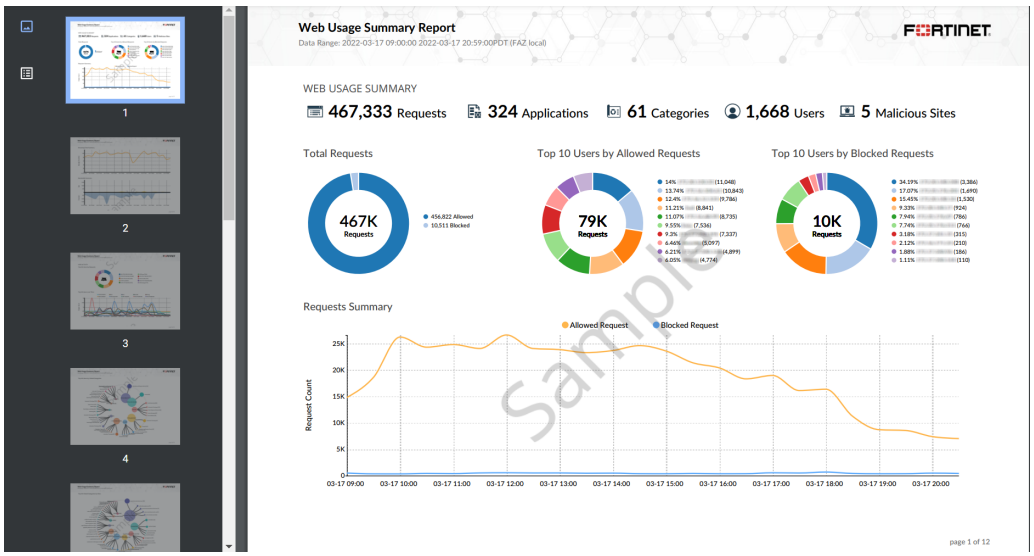
11. Click the table to use icons for editing the table.
You can use the yellow arrows at the edge to add space above or below the selected chart or table.

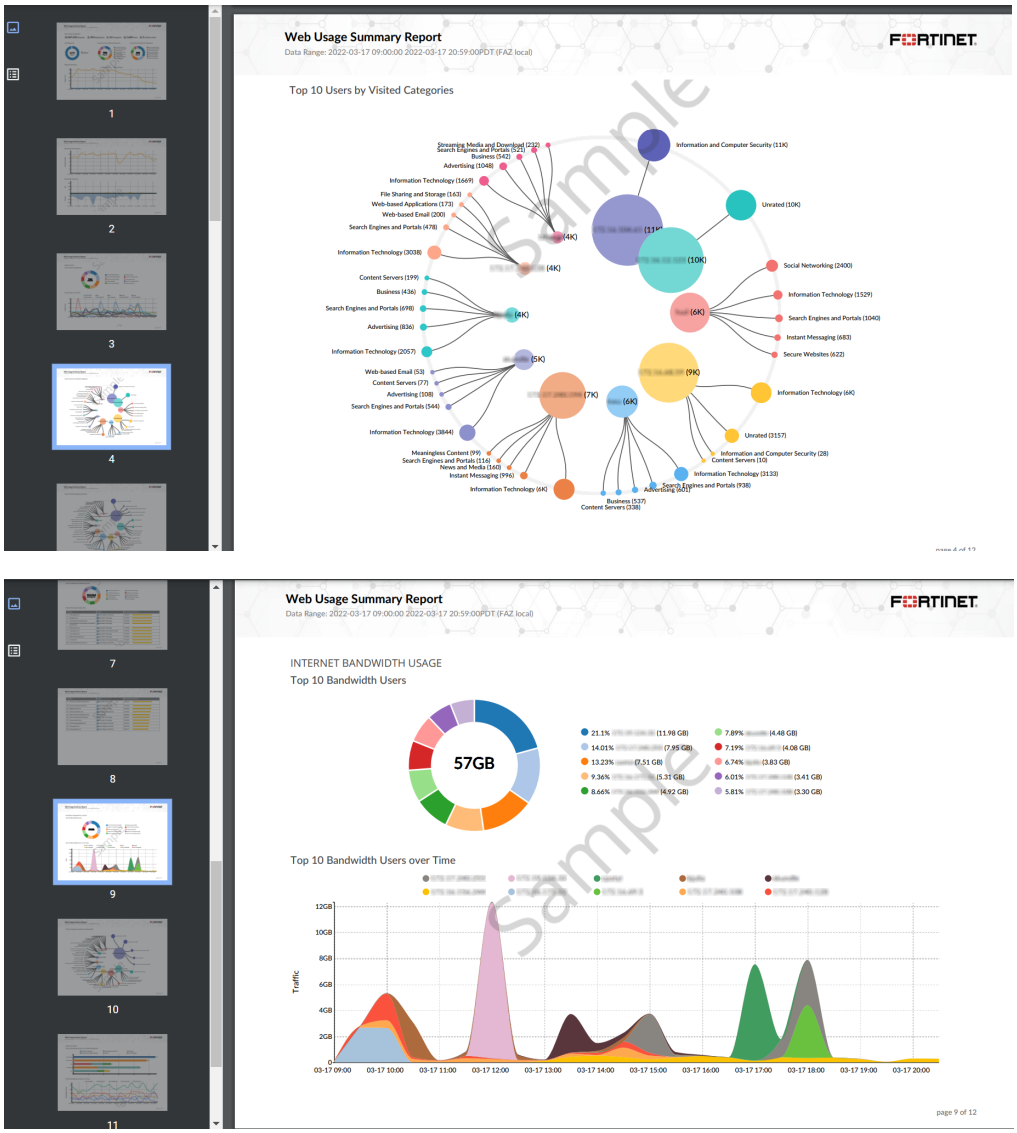


Improve data visualization for the web usage report

A new *Web Usage Summary Report* is implemented based on the existing *Web Usage Report*. This report provides an enhanced user experience with improved charts and graphs.

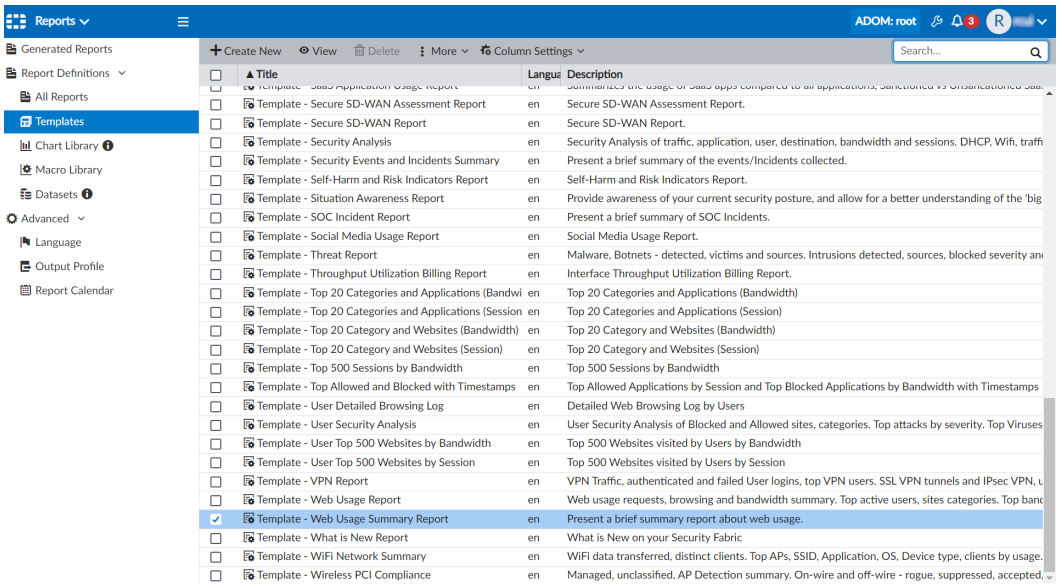
For example, below is a sample of the report in PDF format.





To use the Web Usage Summary Report template:

1. Go to *Reports* > *Report Definitions* > *Templates*.
   From the *Preview* column, you can click *PDF* or *HTML* to preview the report in that format.
2. Select the checkbox for *Template - Web Usage Summary Report*.
3. From the *More* dropdown, click *Clone* to clone template and make adjustments.
   You can also click *Create Report* to create a report using the template.



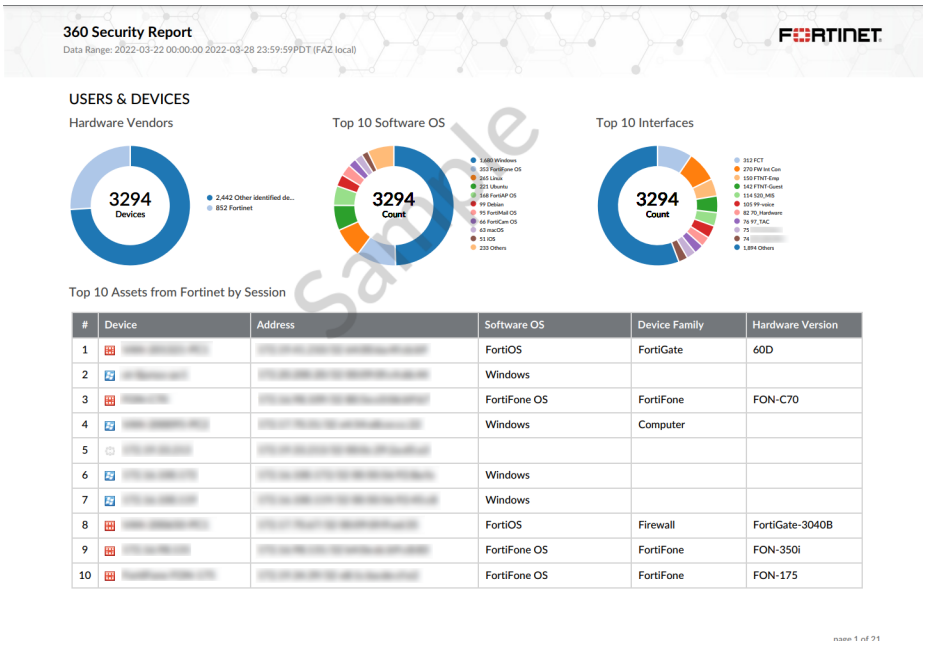
To run the web usage report:

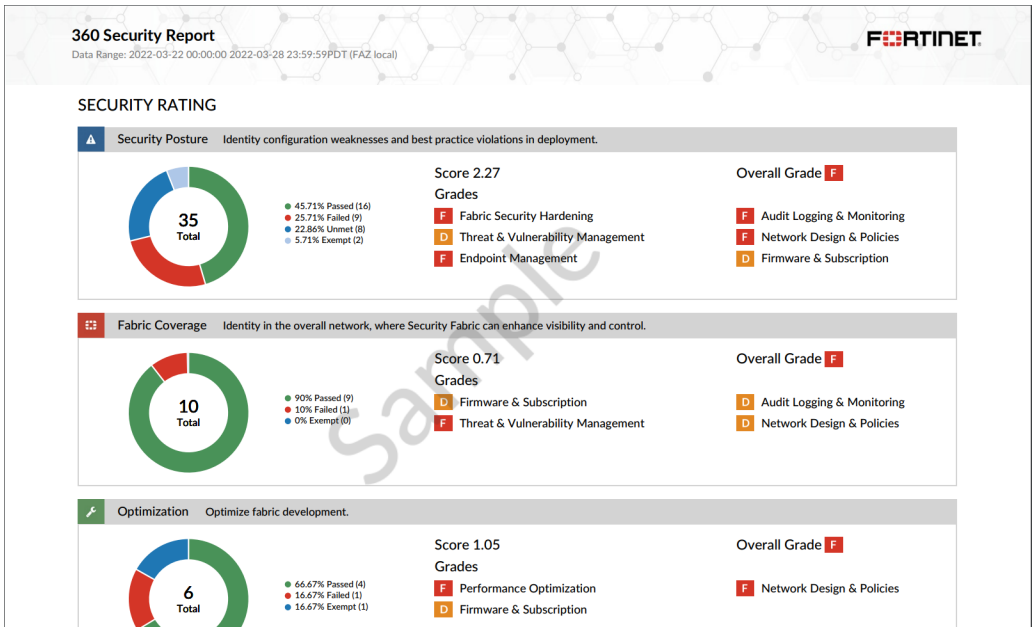
1. Go to *Reports* > *All Reports*, and double-click the row for *Web Usage Summary Report*.
   The *Edit: Web Usage Summary Report* pane opens.
2. Click *Run Report*.
3. Once the report is available, click the format to view the report in.

360 Security Report

A new *360 Security Report* is implemented based on the existing *360-Degree Security Review Report*.

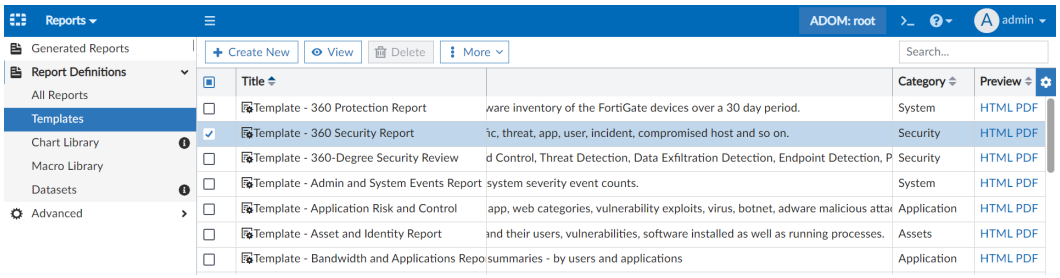
The *360 Security Report* includes data from the FortiOS security rating, providing an enhanced user experience with organized charts and graphs. For example, see a sample of the report in PDF format below.





To use the 360 Security Report template:

1. Go to *Reports* > *Report Definitions* > *Templates*.
   From the *Preview* column, you can click *PDF* or *HTML* to preview the report in that format.
2. Select the checkbox for *Template - 360 Security Report*.
3. From the *More* dropdown, click *Clone* to clone template and make adjustments.
   You can also click *Create Report* to create a report using the template.



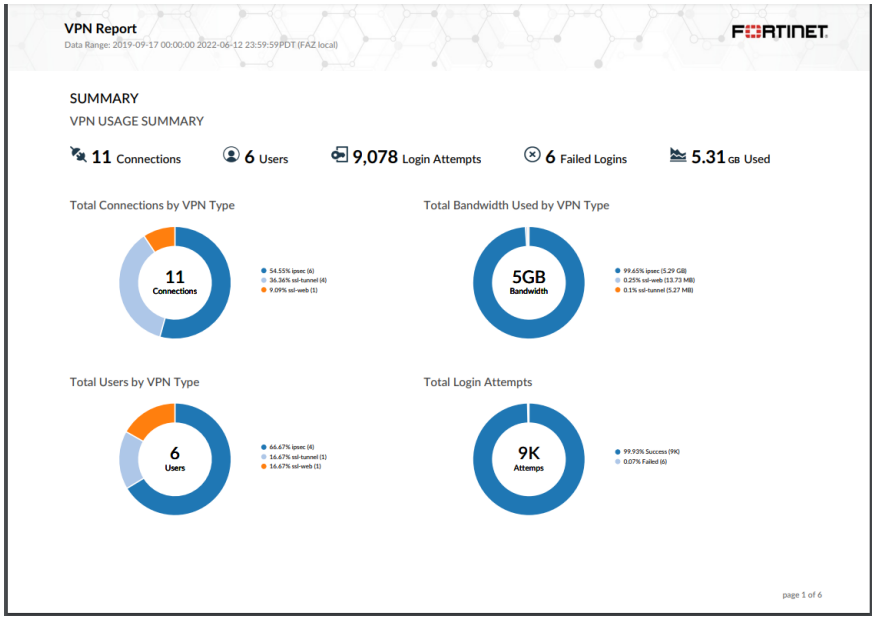
To run the 360 Security Report:

1. Go to *Reports* > *All Reports*, and double-click the row for *360 Security Report*.
   The *Edit: 360 Security Report* pane opens.
2. Click *Run Report*.
3. Once the report is available, click the format to view the report in.

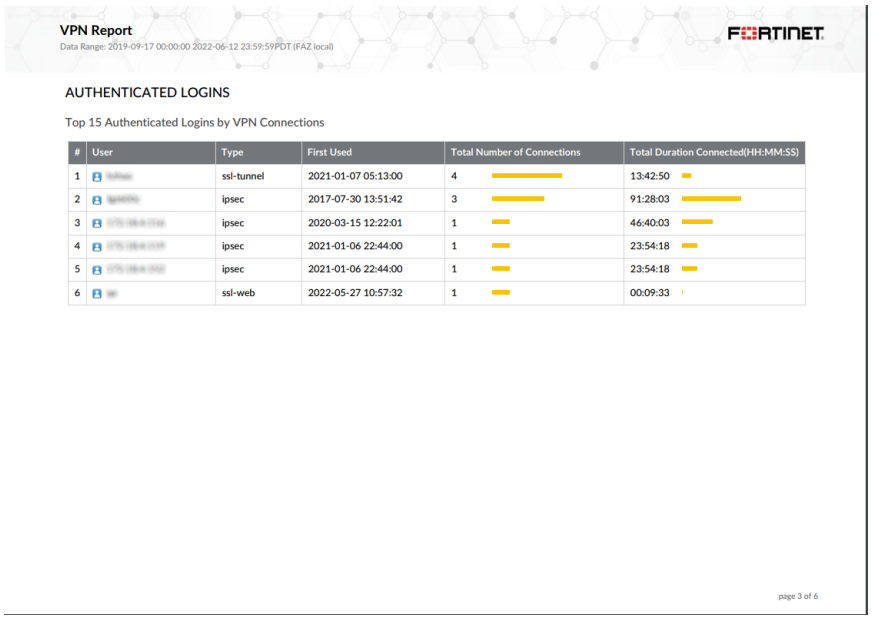
VPN report update - 7.2.1

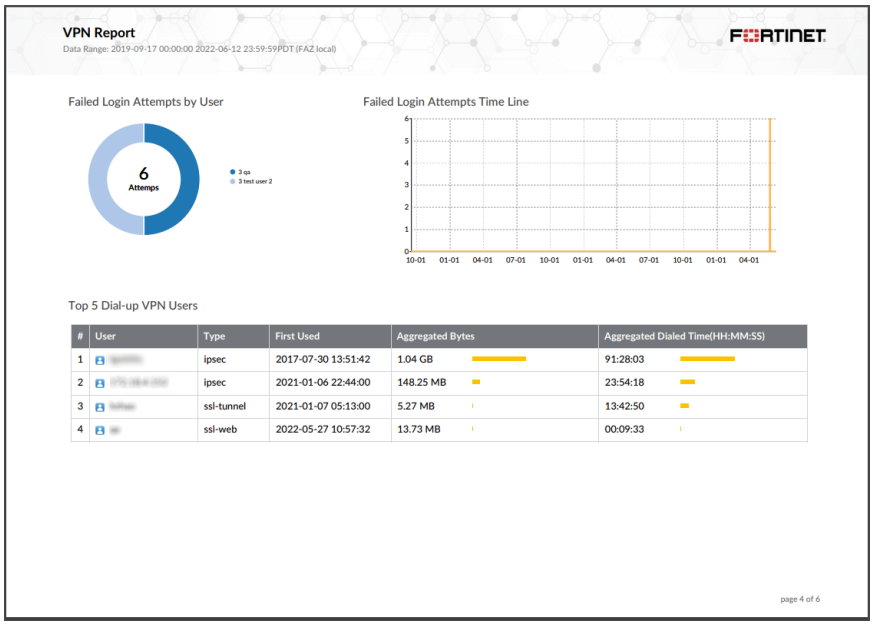
The VPN report has been updated with a new visualization, more analytics, and better organization.

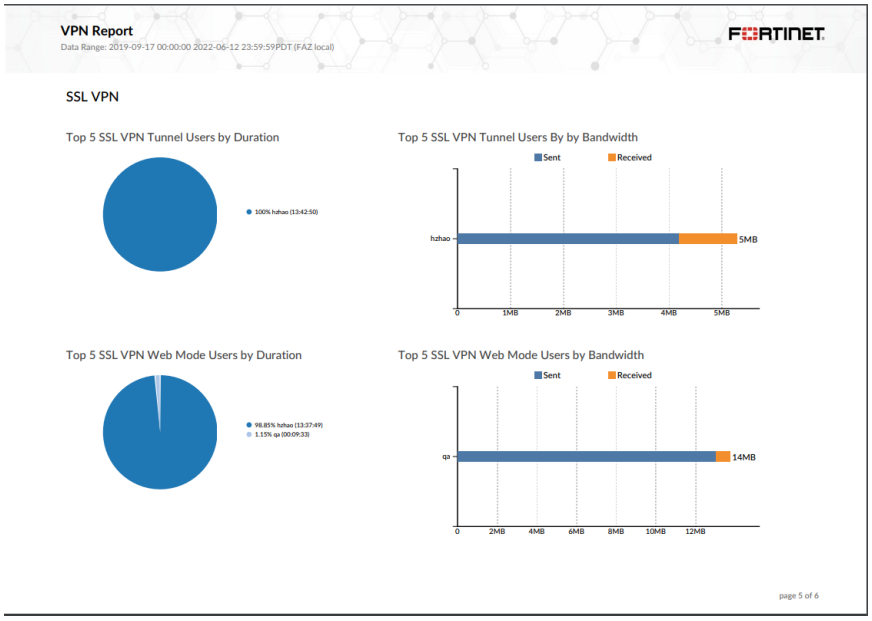
For example, below is a sample of the report in PDF format.

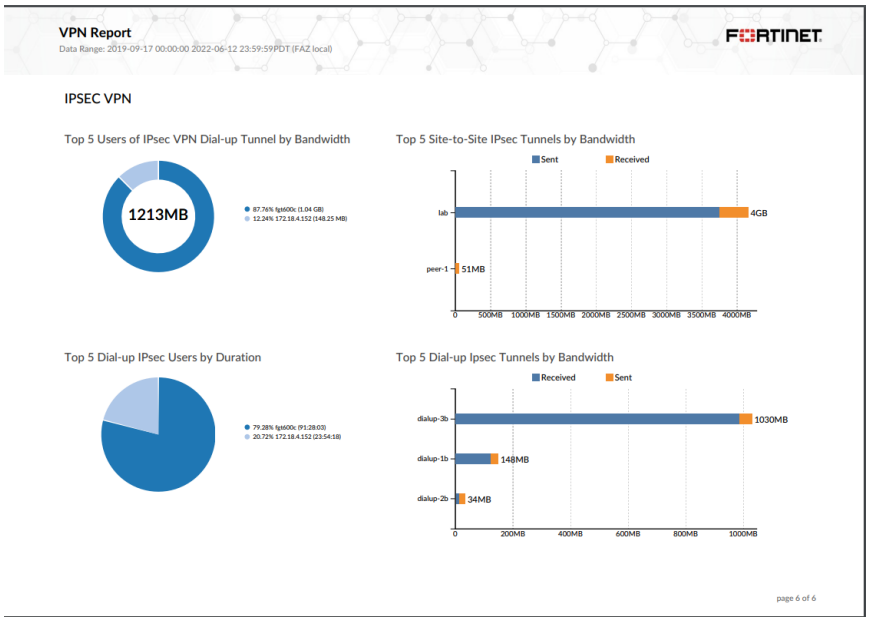



VPN Report
Data Range: 2019-09-17 00:00:00 2022-06-12 23:59:59PDT (FAZ local)
FORTINET
VPN TRAFFIC USAGE TREND
SSL
IPSEC
6G
4G
2G
0
10-01
01-01
04-01
07-01
10-01
01-01
04-01
07-01
10-01
01-01
04-01
VPN USER LOGINS
Users
3
2
1
0
10-01
01-01
04-01
07-01
10-01
01-01
04-01
07-01
10-01
01-01
04-01
page 2 of 6


VPN Report
Data Range: 2019-09-17 00:00:00 2022-06-12 23:59:59PDT (FAZ local)
FORTINET
AUTHENTICATED LOGINS
Top 15 Authenticated Logins by VPN Connections
User Type First Used Total Number of Connections Total Duration Connected(HH:MM:SS)
1 ssl-tunnel 2021-01-07 05:13:00 4 13:42:50
2 ipsec 2017-07-30 13:51:42 3 91:28:03
3 ipsec 2020-03-15 12:22:01 1 46:40:03
4 ipsec 2021-01-06 22:44:00 1 23:54:18
5 ipsec 2021-01-06 22:44:00 1 23:54:18
6 ssl-web 2022-05-27 10:57:32 1 00:09:33
page 3 of 6

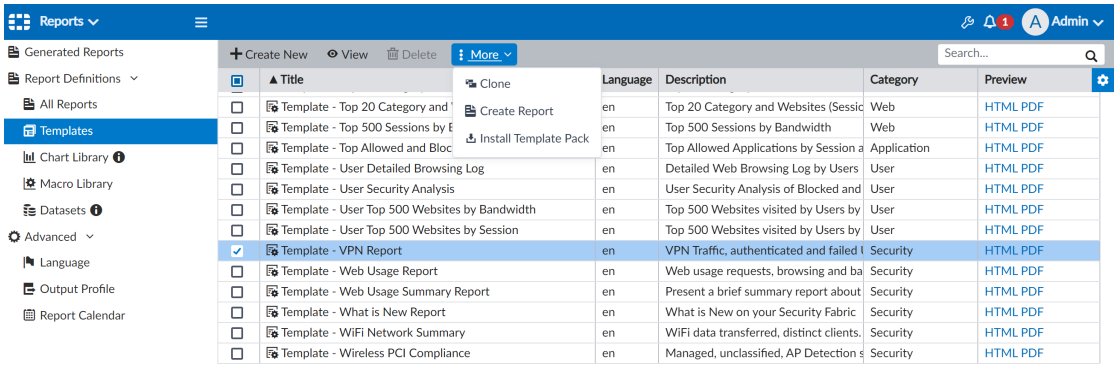

VPN Report
Data Range: 2019-09-17 00:00:00 2022-06-12 23:59:59PDT (FAZ local)
FORTINET
Failed Login Attempts by User
6
Attemps
3 qa
3 test user 2
Failed Login Attempts Time Line
6
5
4
3
2
1
0
10-01
01-01
04-01
07-01
10-01
01-01
04-01
07-01
10-01
01-01
04-01
Top 5 Dial-up VPN Users
User Type First Used Aggregated Bytes Aggregated Dialed Time(HH:MM:SS)
1 ipsec 2017-07-30 13:51:42 1.04 GB 91:28:03
2 ipsec 2021-01-06 22:44:00 148.25 MB 23:54:18
3 ssl-tunnel 2021-01-07 05:13:00 5.27 MB 13:42:50
4 ssl-web 2022-05-27 10:57:32 13.73 MB 00:09:33
page 4 of 6


VPN Report
Data Range: 2019-09-17 00:00:00 2022-06-12 23:59:59PDT (FAZ local)
FORTINET
SSL VPN
Top 5 SSL VPN Tunnel Users by Duration
100% hzhao (13:42:50)
Top 5 SSL VPN Tunnel Users By by Bandwidth
Sent
Received
hzhao
5MB
0
1MB
2MB
3MB
4MB
5MB
Top 5 SSL VPN Web Mode Users by Duration
98.85% hzhao (13:37:49)
1.15% qa (00:09:33)
Top 5 SSL VPN Web Mode Users by Bandwidth
Sent
Received
qa
14MB
0
2MB
4MB
6MB
8MB
10MB
12MB
page 5 of 6



To use the VPN Report template:

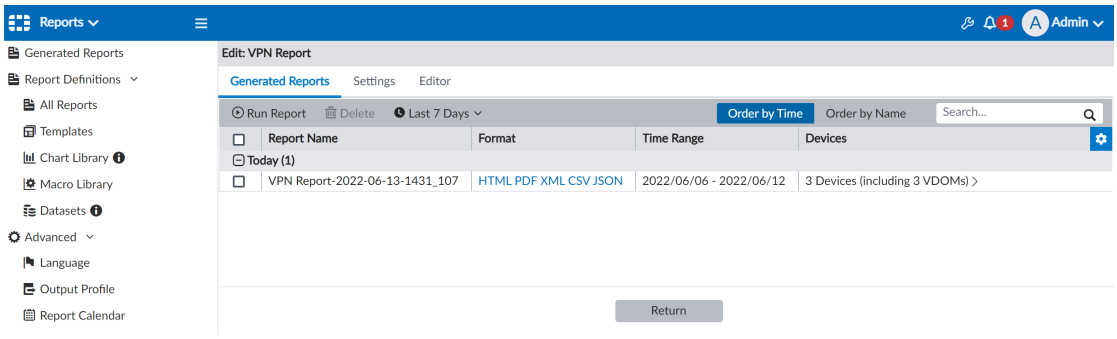
1. Go to *Reports* > *Report Definitions* > *Templates*.
   From the *Preview* column, you can click *PDF* or *HTML* to preview the report in that format.
2. Select the checkbox for *Template - VPN Report*.
3. From the *More* dropdown, click *Clone* to clone the template and make adjustments.
   You can also click *Create Report* to create a report using the template.



To run the VPN Report:

1. Go to *Reports* > *Report Definitions* > *All Reports*.
2. Double-click the row for *VPN Report*.
3. In the *Generated Reports* tab, click *Run Report*.

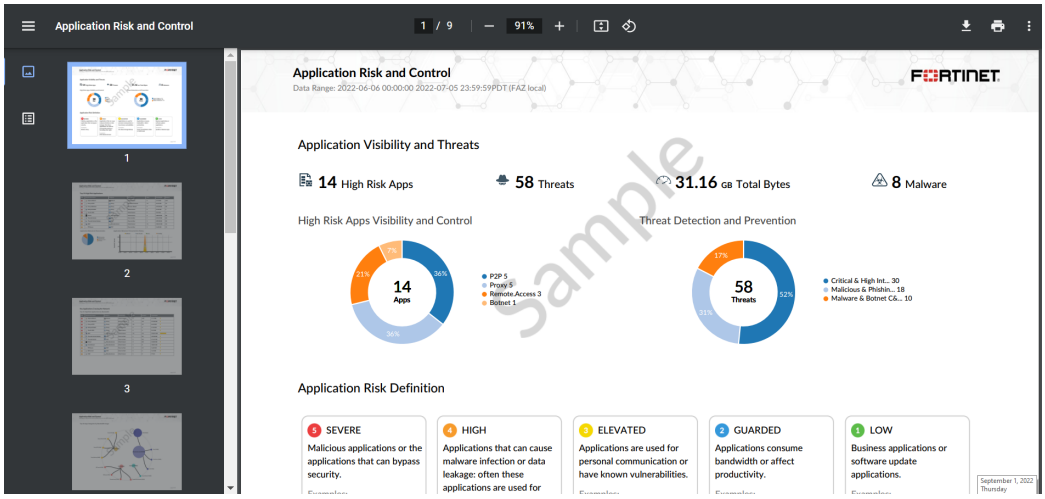
4. Once the report is generated, click a format in the *Format* column to view the report.

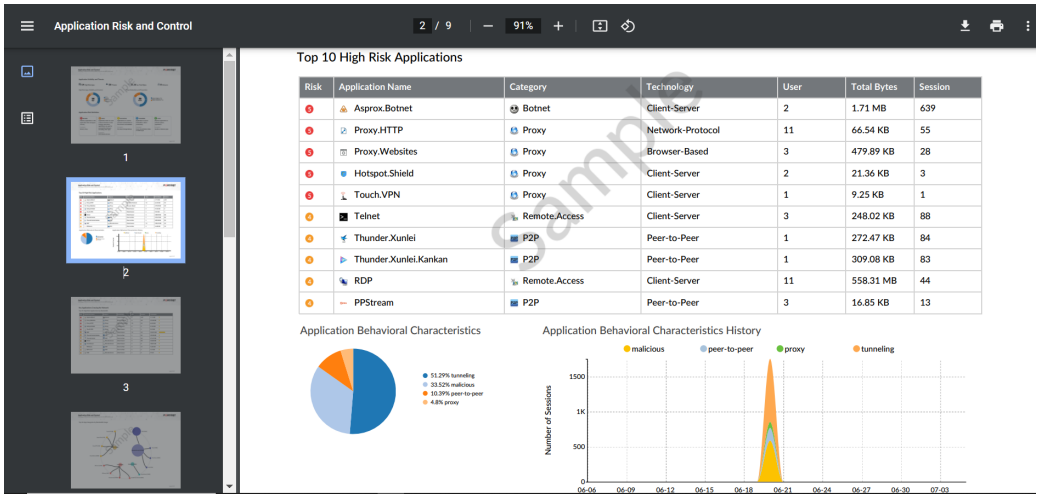


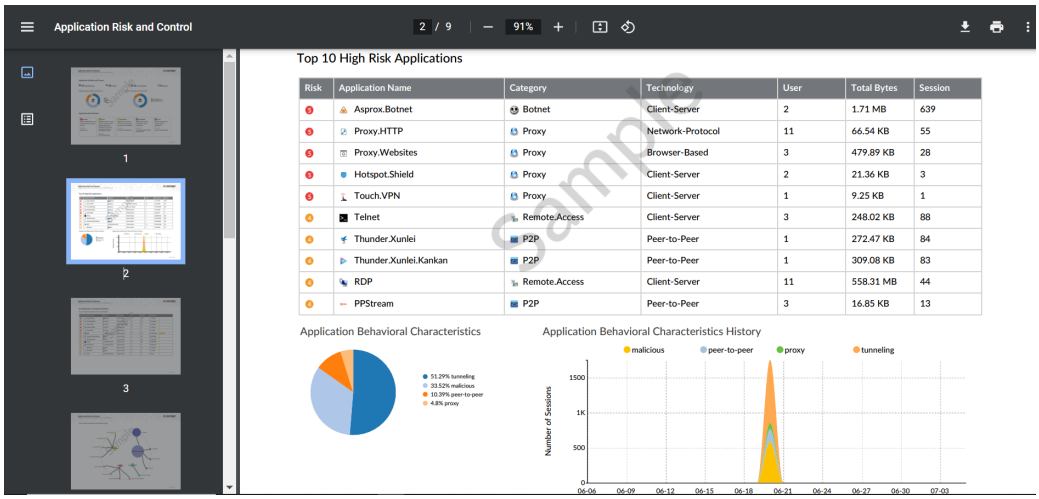
Application risk and control report update - 7.2.1

The *Application Risk and Control* report is updated to improve data visualization.

For example, below is a sample of the report in PDF format.

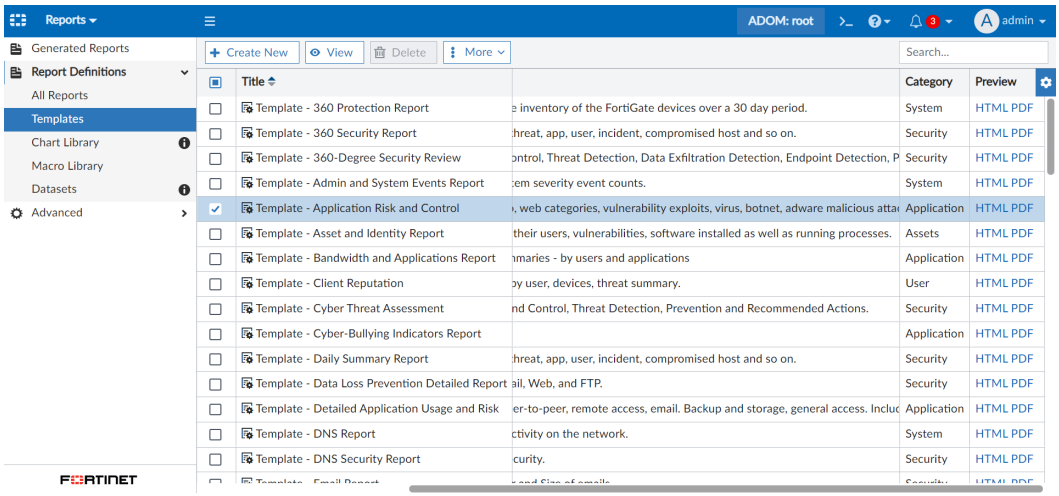






To use the Application Risk and Control report template:

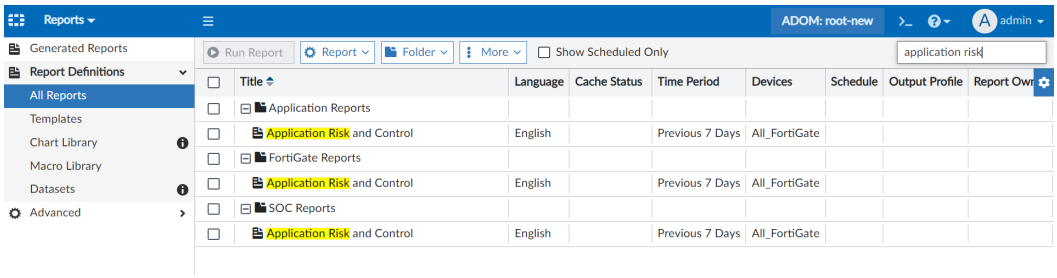
1. Go to *Reports* > *Report Definitions* > *Templates*.
   From the *Preview* column, you can click *PDF* or *HTML* to preview the report in that format.
2. Select the checkbox for *Template - Application Risk and Control*.



3. From the *More* dropdown, click *Clone* to clone the template and make adjustments.
   You can also click *Create Report* to create a report using the template.

To run the Application Risk and Control report:

1. Go to *Reports* > *Report Definitions* > *All Reports*.
2. Double-click the row for *Application Risk and Control*.
   You can find the report using the search bar. For example, see the image below.

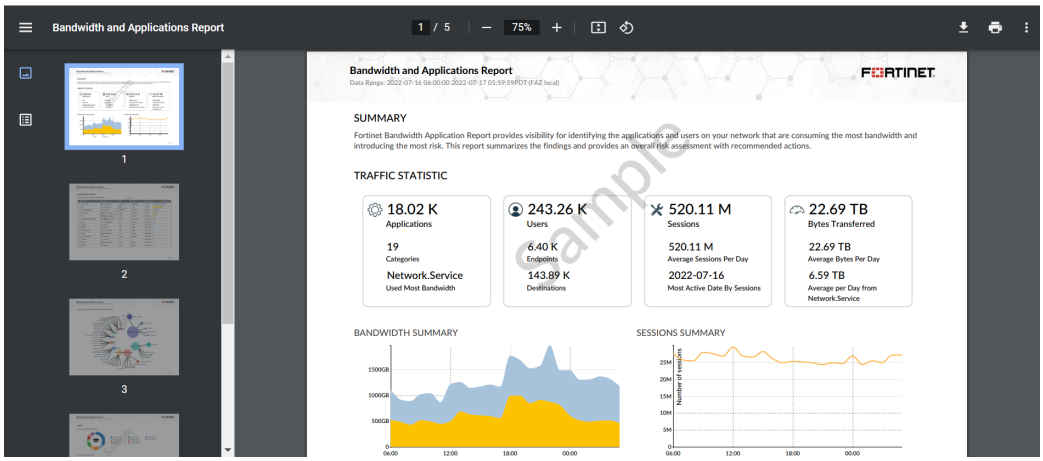


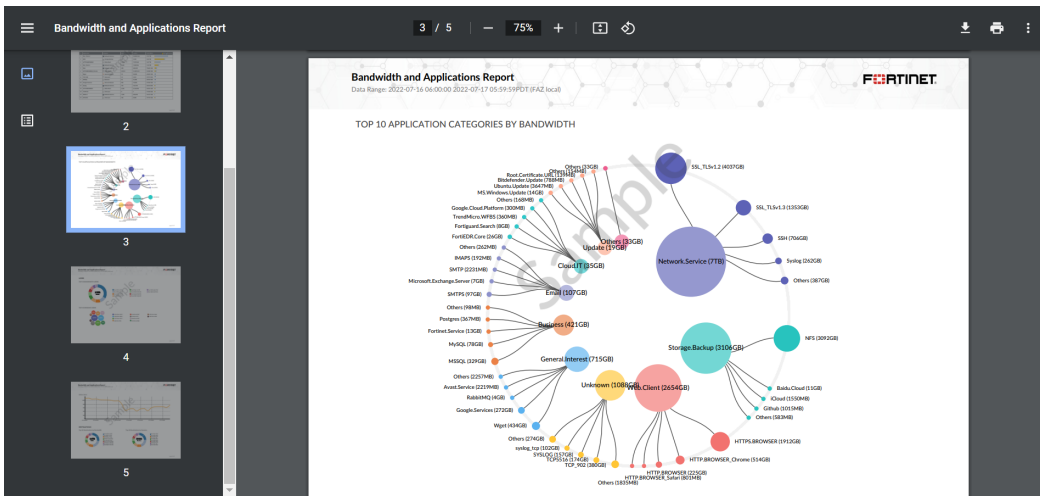
3. In the *Generated Reports* tab, click *Run Report*.
4. Once the report is generated, click a format in the *Format* column to view the report.

Bandwidth and applications report update - 7.2.1

The *Bandwidth and Applications Report* is updated to improve data visualization.

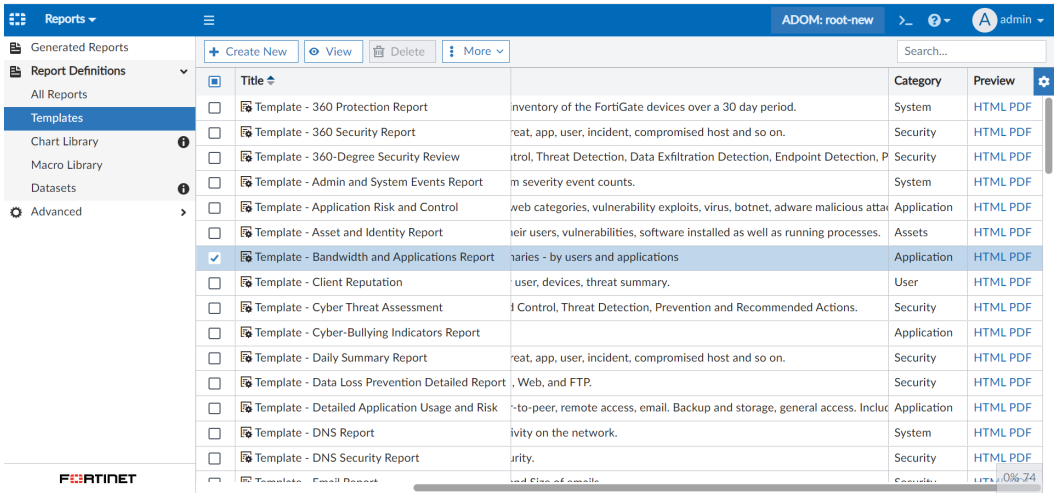
For example, below is a sample of the report in PDF format.





To use the Bandwidth and Applications Report template:

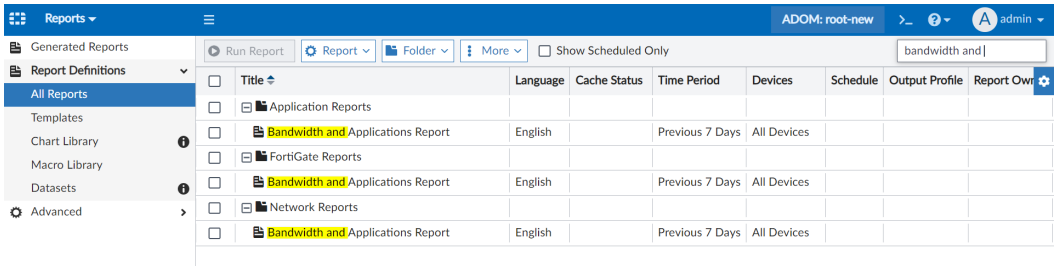
1. Go to *Reports* > *Report Definitions* > *Templates*.
   From the *Preview* column, you can click *PDF* or *HTML* to preview the report in that format.
2. Select the checkbox for *Template - Bandwidth and Applications Report*.



3. From the *More* dropdown, click *Clone* to clone the template and make adjustments.
   You can also click *Create Report* to create a report using the template.

To run the Bandwidth and Applications Report:

1. Go to *Reports* > *Report Definitions* > *All Reports*.
2. Double-click the row for *Bandwidth and Applications Report*.
   You can find the report using the search bar. For example, see the image below.

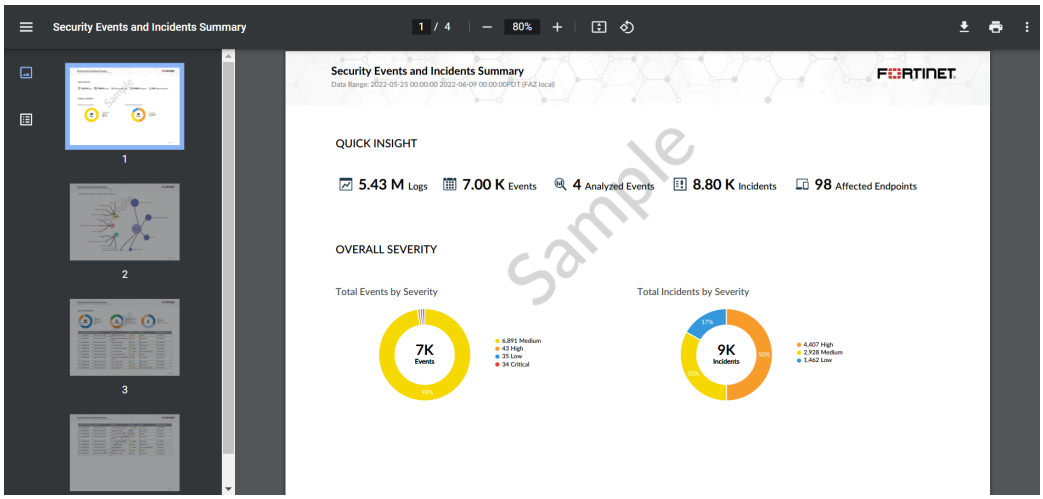


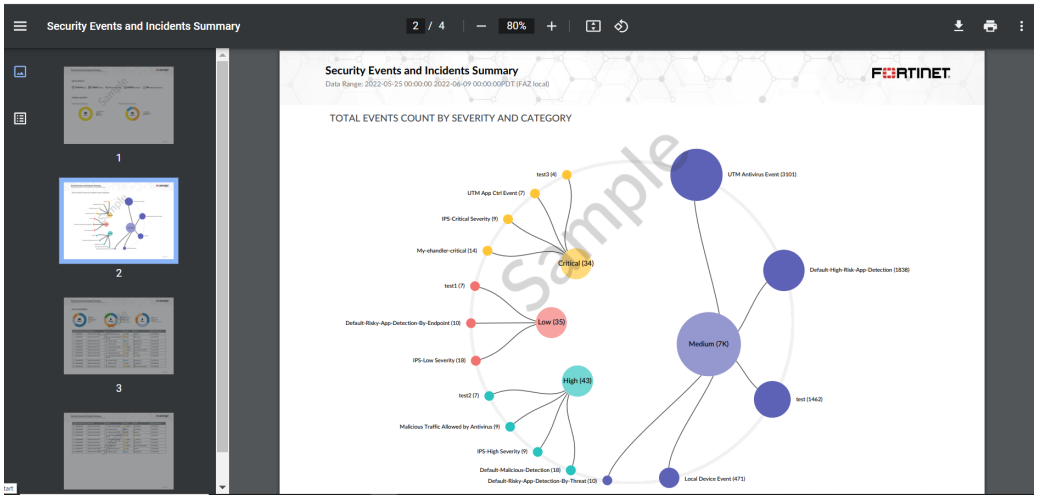
3. In the *Generated Reports* tab, click *Run Report*.
4. Once the report is generated, click a format in the *Format* column to view the report.

Security events and incidents summary report update - 7.2.1

The *Security Events and Incidents Summary* report is updated to improve data visualization.

For example, below is a sample of the report in PDF format.

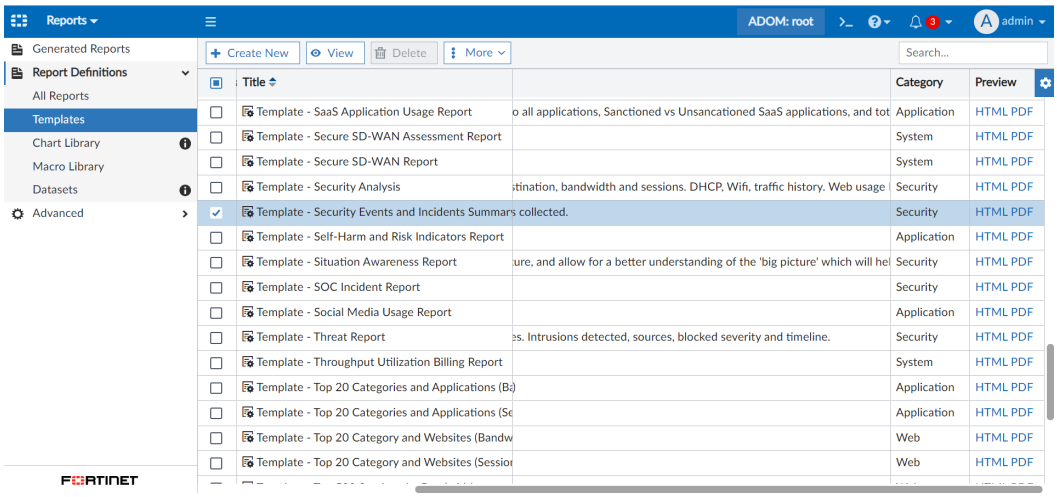




To use the Security Events and Incidents Summary report template:

1. Go to *Reports* > *Report Definitions* > *Templates*.
   From the *Preview* column, you can click *PDF* or *HTML* to preview the report in that format.

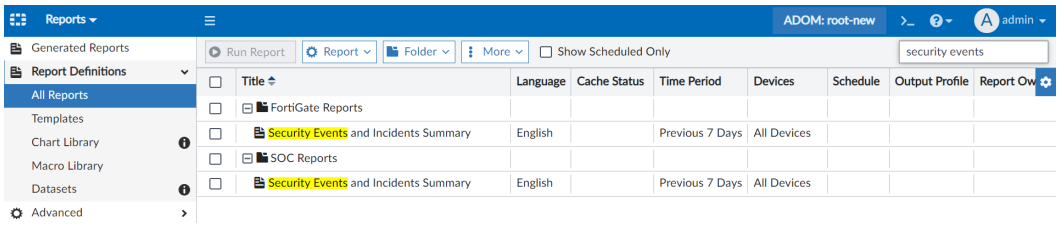
2. Select the checkbox for *Template - Security Events and Incidents Summary*.



3. From the *More* dropdown, click *Clone* to clone the template and make adjustments.
   You can also click *Create Report* to create a report using the template.

To run the Security Events and Incidents Summary report:

1. Go to *Reports* > *Report Definitions* > *All Reports*.
2. Double-click the row for *Security Events and Incidents Summary*.
   You can find the report using the search bar. For example, see the image below.

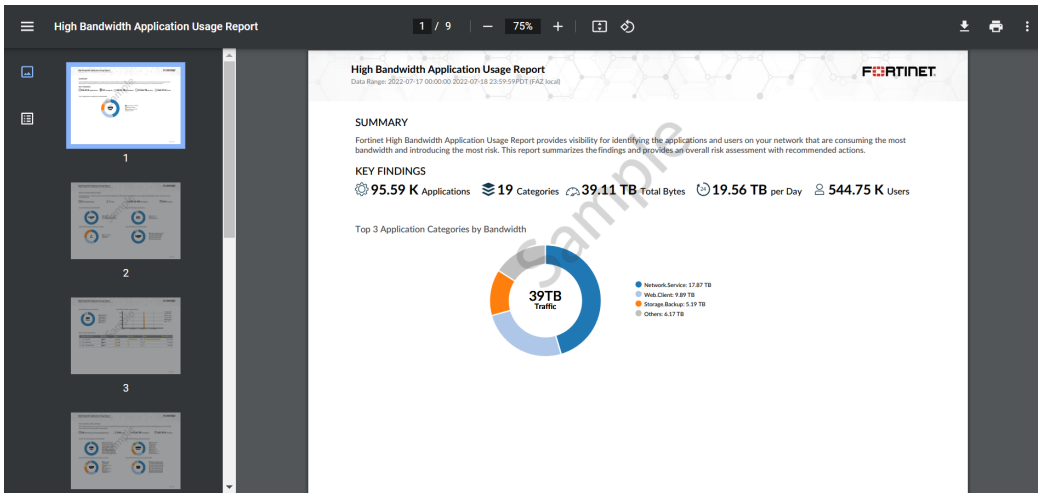


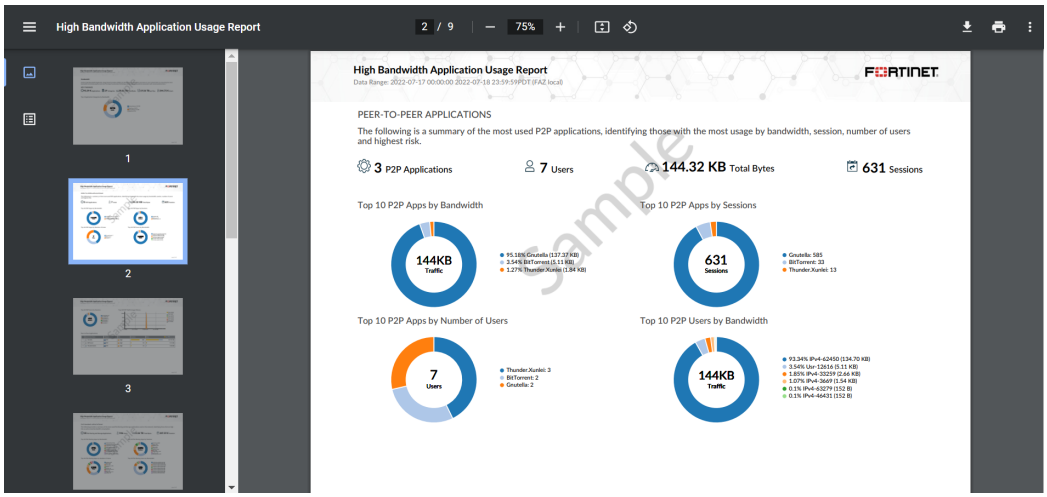
3. In the *Generated Reports* tab, click *Run Report*.
4. Once the report is generated, click a format in the *Format* column to view the report.

High bandwidth application usage report update - 7.2.1

The *High Bandwidth Application Usage Report* is updated to improve data visualization.

For example, below is a sample of the report in PDF format.

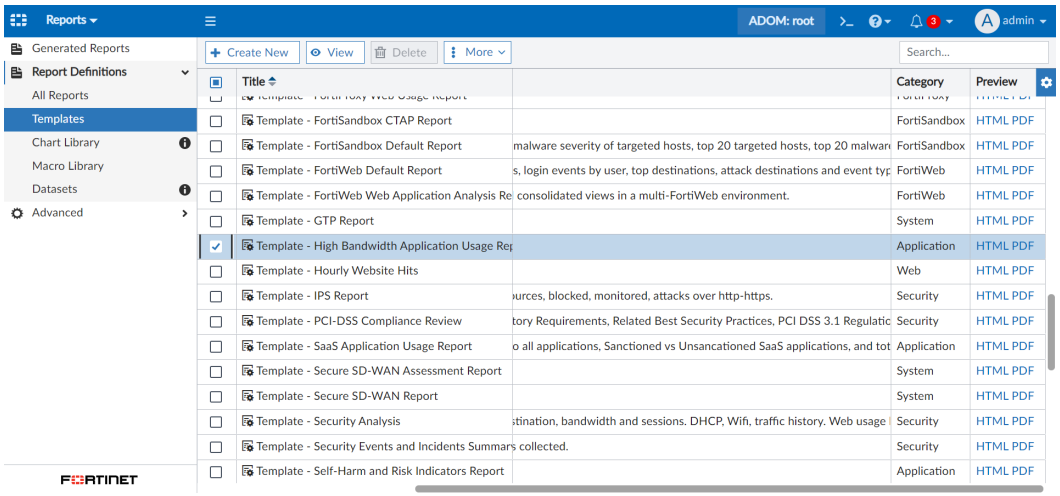




To use the High Bandwidth Application Usage Report template:

1. Go to *Reports* > *Report Definitions* > *Templates*.
   From the *Preview* column, you can click *PDF* or *HTML* to preview the report in that format.

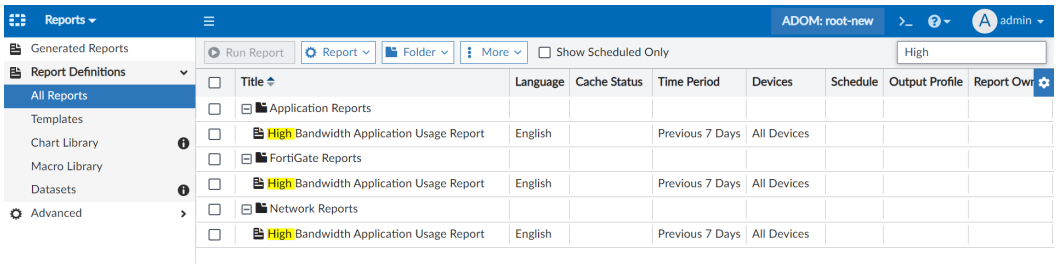
2. Select the checkbox for *Template - High Bandwidth Application Usage Report*.



3. From the *More* dropdown, click *Clone* to clone the template and make adjustments.
   You can also click *Create Report* to create a report using the template.

To run the High Bandwidth Application Usage Report:

1. Go to *Reports* > *Report Definitions* > *All Reports*.
2. Double-click the row for *High Bandwidth Application Usage Report*.
   You can find the report using the search bar. For example, see the image below.

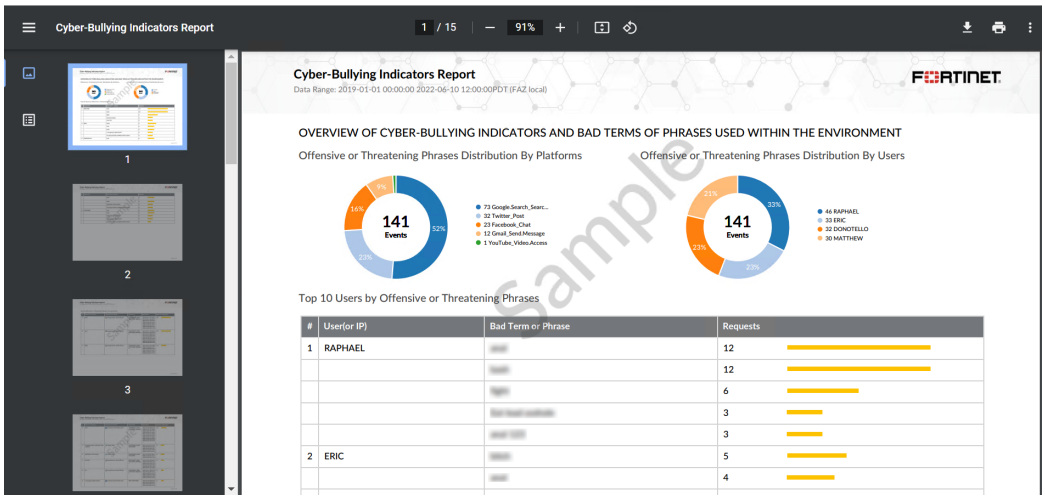


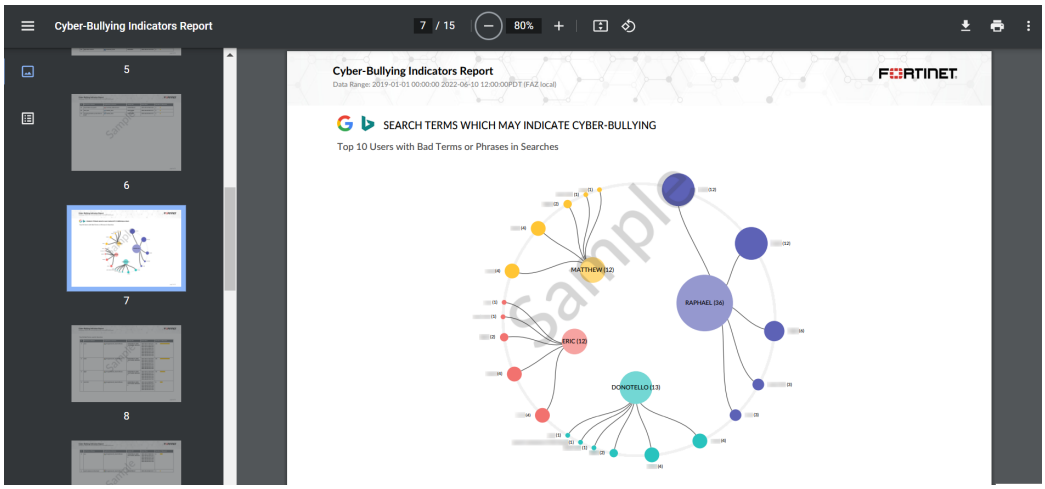
3. In the *Generated Reports* tab, click *Run Report*.
4. Once the report is generated, click a format in the *Format* column to view the report.

Cyber-bullying indicators report update - 7.2.1

The content and style of the *Cyber-Bullying Indicators Report* is updated to improve data visualization.

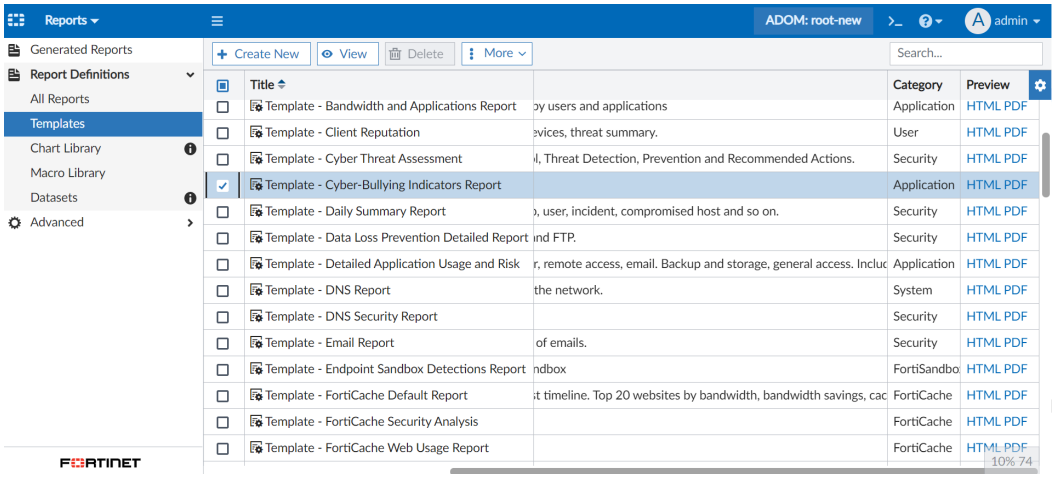
For example, below is a sample of the report in PDF format.





To use the Cyber-Bullying Indicators Report template:

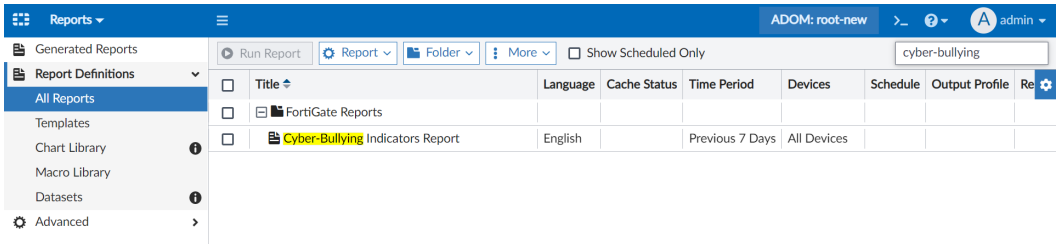
1. Go to *Reports* > *Report Definitions* > *Templates*.
   From the *Preview* column, you can click *PDF* or *HTML* to preview the report in that format.
2. Select the checkbox for *Template - Cyber-Bullying Indicators Report*.



3. From the *More* dropdown, click *Clone* to clone the template and make adjustments.
   You can also click *Create Report* to create a report using the template.

To run the Cyber-Bullying Indicators Report:

1. Go to *Reports* > *Report Definitions* > *All Reports*.
2. Double-click the row for *Cyber-Bullying Indicators Report*.
   You can find the report using the search bar. For example, see the image below.

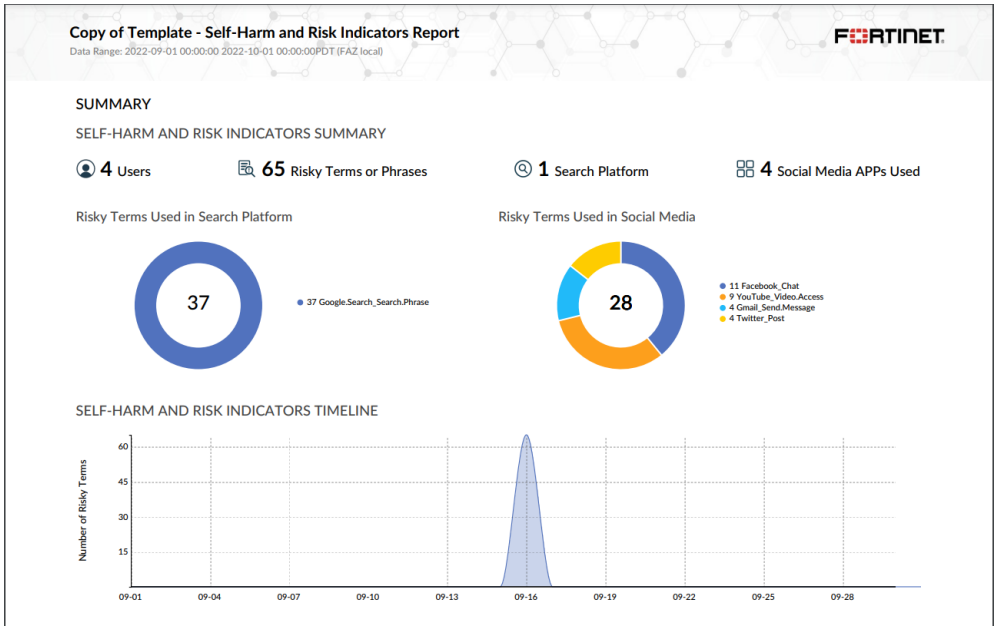


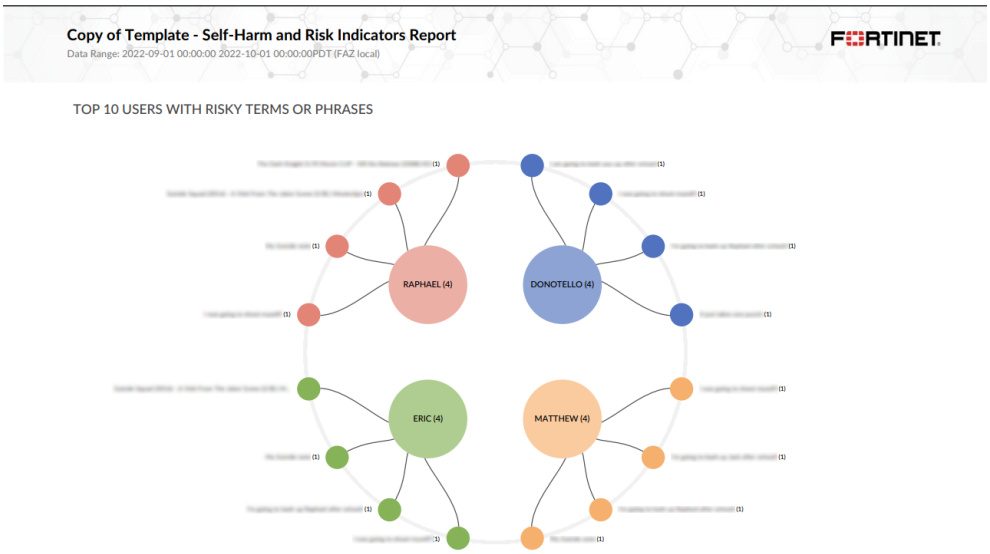
3. In the *Generated Reports* tab, click *Run Report*.
4. Once the report is generated, click a format in the *Format* column to view the report.

Self-harm and risk indicators report update - 7.2.2

The *Self-Harm and Risk Indicators Report* is updated to improve data visualization.

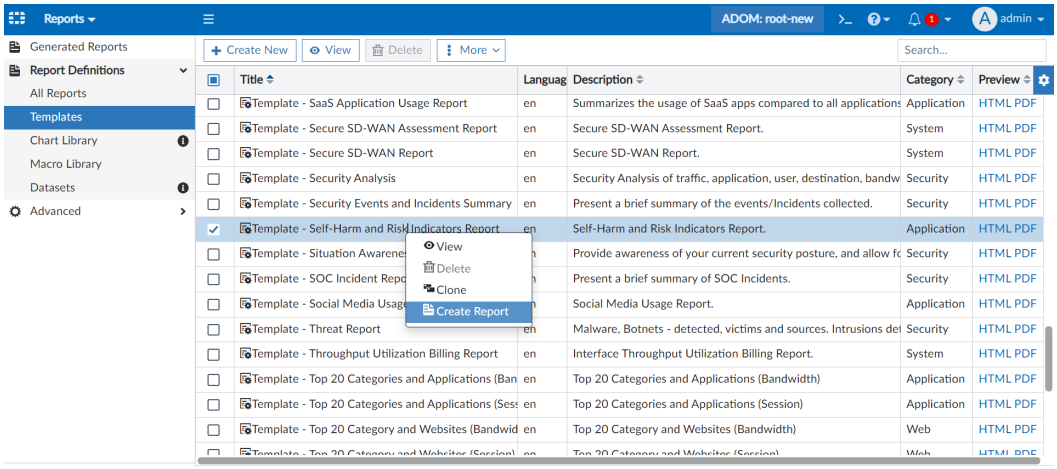
For example, below is a sample of the report in PDF format.





To use the Self-Harm and Risk Indicators Report template:

1. Go to *Reports* > *Report Definitions* > *Templates*.
   From the *Preview* column, you can click *PDF* or *HTML* to preview the report in that format.
2. Select the checkbox for *Template - Self-Harm and Risk Indicators Report*.
3. Right-click the template to select *Create Report*.
   You can also select *Clone* to clone the template and make adjustments.



To run the Self-Harm and Risk Indicators Report:

1. Go to *Reports* > *Report Definitions* > *All Reports*.
2. Double-click the row for *Self-Harm and Risk Indicators Report*.
   Alternatively, you can use the copy that you created from the template. You can find the report using the search bar.
3. In the *Generated Reports* tab, click *Run Report*.
4. Once the report is generated, click a format in the *Format* column to view the report.

Others

This section lists the new features added to FortiAnalyzer for other topics relating to logging and reporting:

- Use device metadata in datasets and reports on page 93
- Search by object names on page 95
- Generate system event log when daemon crashes 7.2.2 on page 96

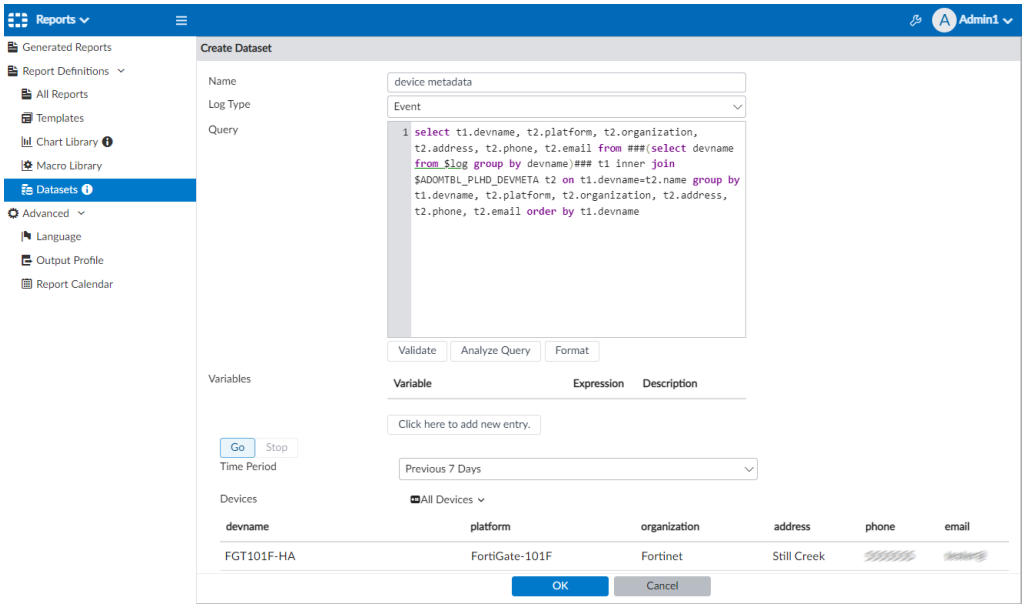
Use device metadata in datasets and reports

Device metadata such as branch ID, device geo-location, device names, and organization names can now be used by datasets and reports to provide enriched information.

Below are steps to create and run a custom report with device metadata.

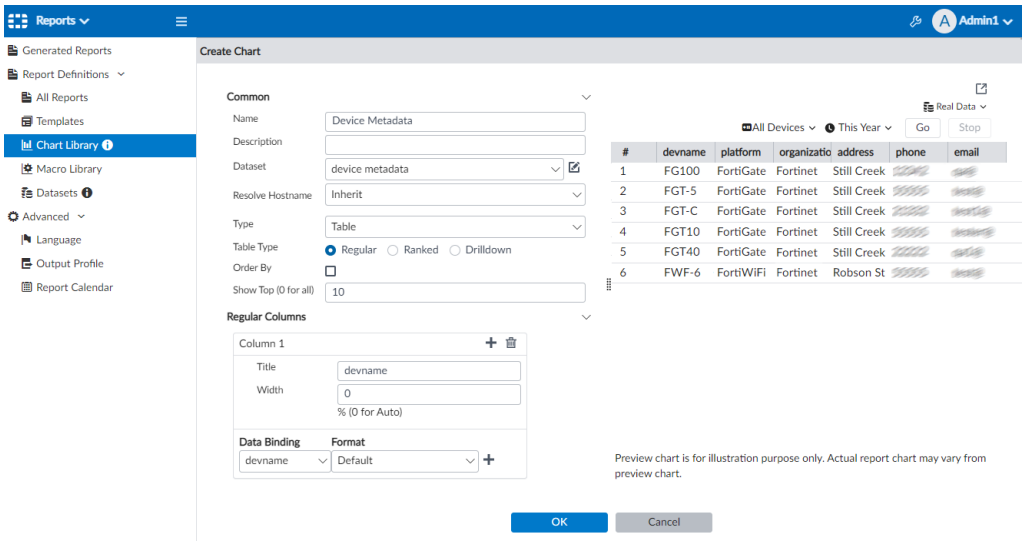
To create a dataset that queries the device metadata:

1. Go to *Reports* > *Report Definitions* > *Datasets*, and click *Create New*.
2. Configure a custom dataset to query logs and device metadata.
3. Click *Go* to test the output of the query.
4. If there are no errors to fix in the *Query*, click *OK* to save the dataset.



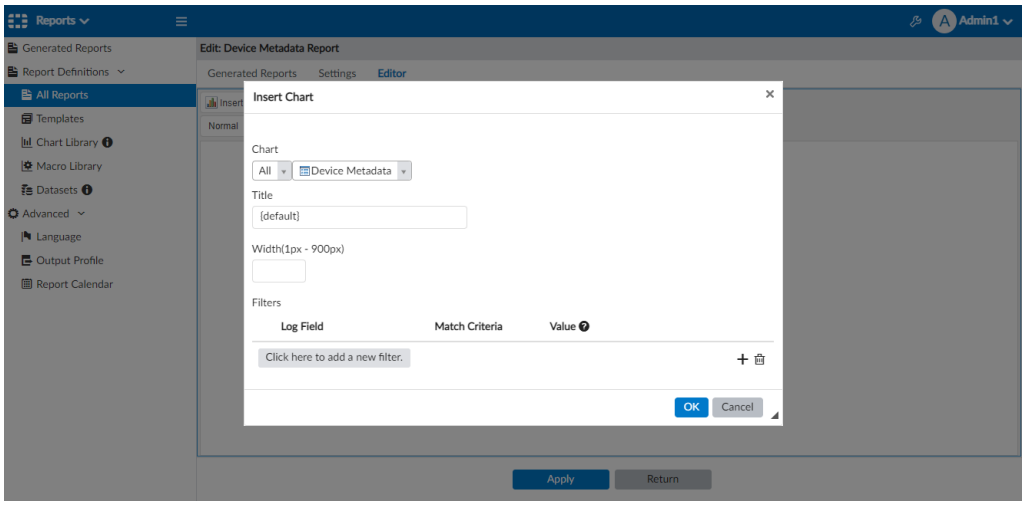
To create a chart using the dataset with device metadata:

1. Go to *Reports* > *Report Definitions* > *Chart Library*, and click *Create New*.
2. In the *Name* field, type a name for the chart.
3. From the *Dataset* dropdown, select the dataset created with device metadata.
4. Configure the chart, and click *OK*.
   See the FortiAnalyzer Administration Guide for more information about creating charts. Use the preview chart to review the chart as it is configured.

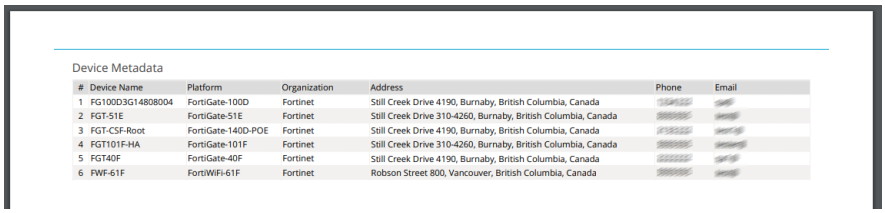


To create and run a report using the device metadata chart:

1. Go to *Reports* > *Report Definitions* > *All Reports*.
2. From the *Report* dropdown in the toolbar, click *Create New*.
   You can also edit an existing or cloned report to use this chart according to your needs.
3. Configure a name and folder location for the report.
   In this example, the report name is `Device Metadata Report`.
4. Go to the *Editor* tab for the report, and click *Insert Chart*.
   The *Insert Chart* dialog opens.
5. From the *Chart* dropdown, select the chart that uses the device metadata.
6. Click *OK*.



7. Configure other settings for the report, and click *Apply* to save the report.
   See the FortiAnalyzer Administration Guide for more information about creating custom reports.
8. Go to the *Generated Reports* tab, and click *Run Report*.
9. Once the report is generated, click the *Format* you would like to download the report in.
   Below is an example of a PDF report with device metadata.

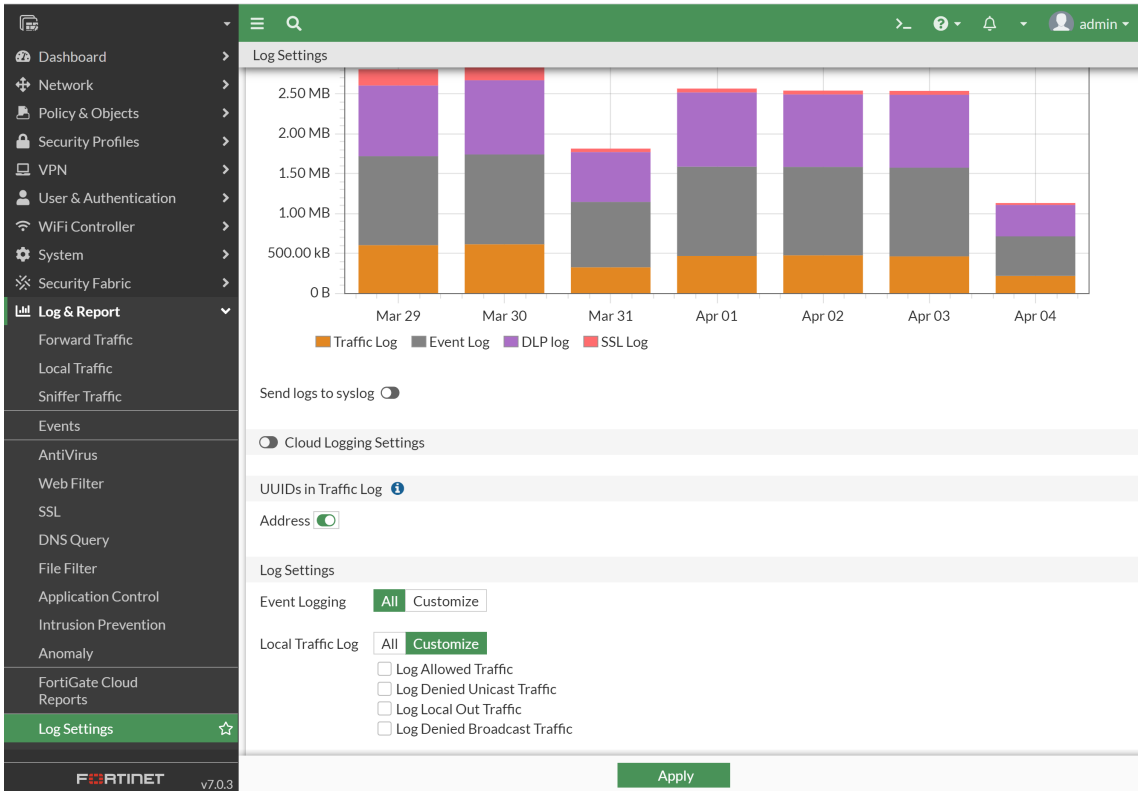


Search by object names

`Source Object` and `Destination Object` filters are now available to simplify search. The FortiAnalyzer admin can select an object filter and specify an object name to search *Log View* and *FortiView*.

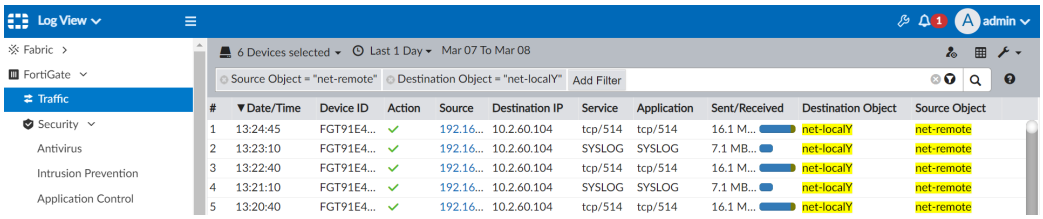
To enable this feature from the FortiGate device:

1. In the FortiOS GUI, go to *Log & Report* > *Log Settings*.
2. Under *UUIDs in Traffic Log*, enable *Address*.
3. Click *Apply*.

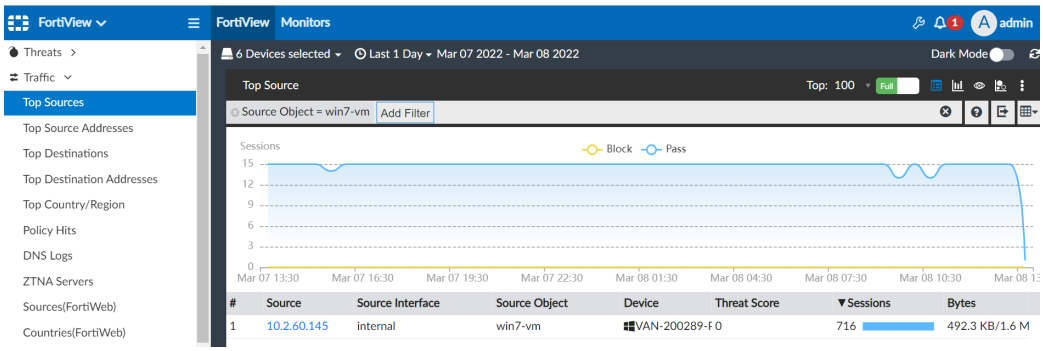


Examples using the filters in FortiAnalyzer:

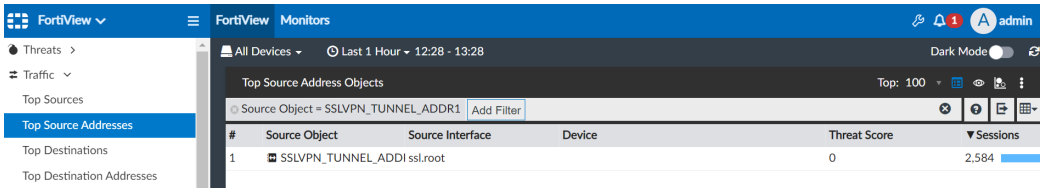
- *Log View* > *FortiGate* > *Traffic* filtered by `Source Object` and `Destination Object`. These filters are available for traffic logs and utm logs. The *Destination Object* and *Source Object* columns are added.



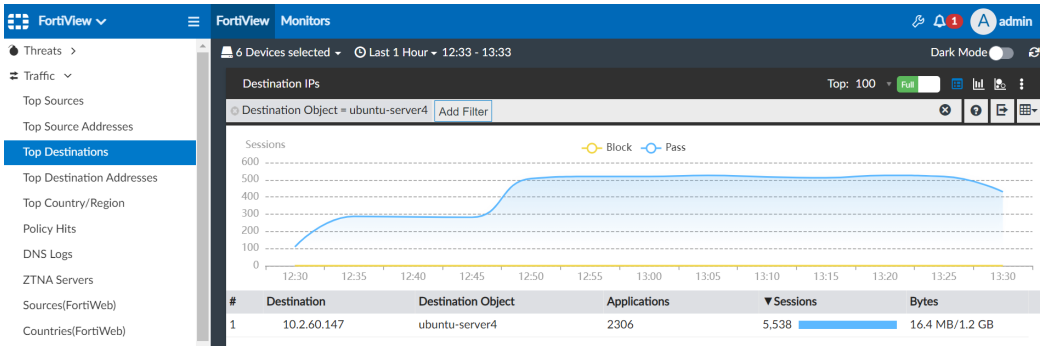
- *FortiView* > *Traffic* > *Top Sources* filtered by `Source Object`. The *Source Object* column is added.



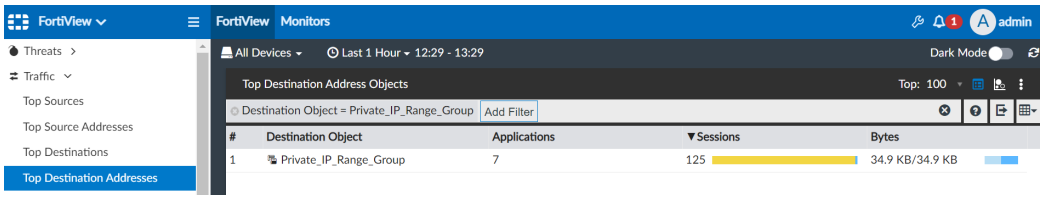
- *FortiView* > *Traffic* > *Top Source Addresses* filtered by `Source Object`.



- *FortiView* > *Traffic* > *Top Destinations* filtered by `Destination Object`.



- *FortiView* > *Traffic* > *Top Destination Addresses* filtered by `Destination Object`. The *Destination Object* column is added.



Generate system event log when daemon crashes - 7.2.2

You can now enable, via CLI, the functionality to generate a system event log when a daemon crashes.

These event logs are generated with *level=warning* and the entire backtrace is included in the *msg* field.

To generate a system event log when a daemon crashes, you must enable `log-daemon-crash` in the FortiAnalyzer CLI.

To generate a system event log when a daemon crashes:

1. Enter the following command in the FortiAnalyzer CLI:

```
config system locallog setting
   set log-daemon-crash enable
end
```

By default, `log-daemon-crash` is set to `disable`. When disabled, a system event log is not generated when a daemon crashes.

To view the system event logs for daemon crashes:

1. In the FortiAnalyzer GUI, go to *System Settings* > *Event Log*.

You can also check crash logs by entering the following command in the FortiAnalyzer CLI:
`diagnose debug crashlog read`

System

This section lists the new features added to FortiAnalyzer for system settings:

- High Availability (HA) on page 98
- Administrators on page 101
- Network on page 103
- Others on page 105

High Availability (HA)

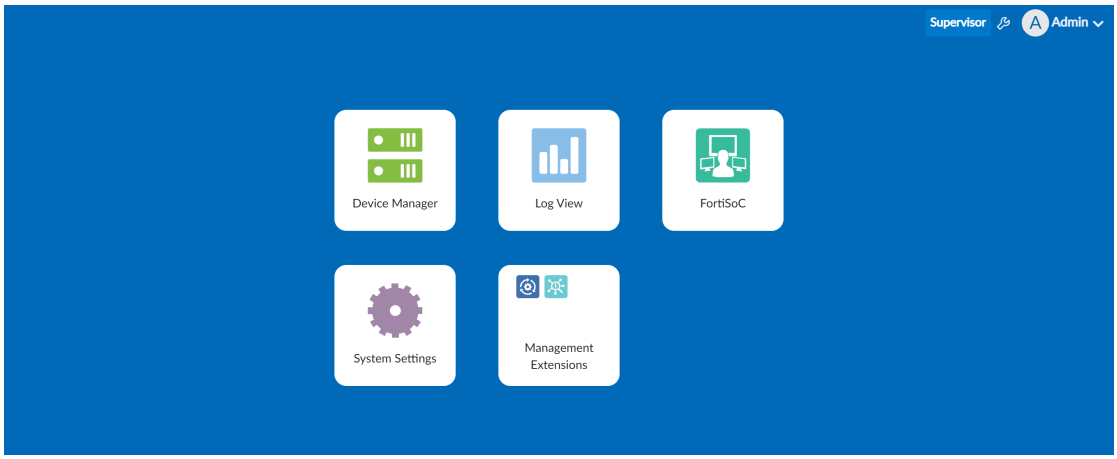
This section lists the new features added to FortiAnalyzer for high availability (HA):

- Global log search across FortiAnalyzer Fabric members 7.2.1 on page 98

Global log search across FortiAnalyzer Fabric members - 7.2.1

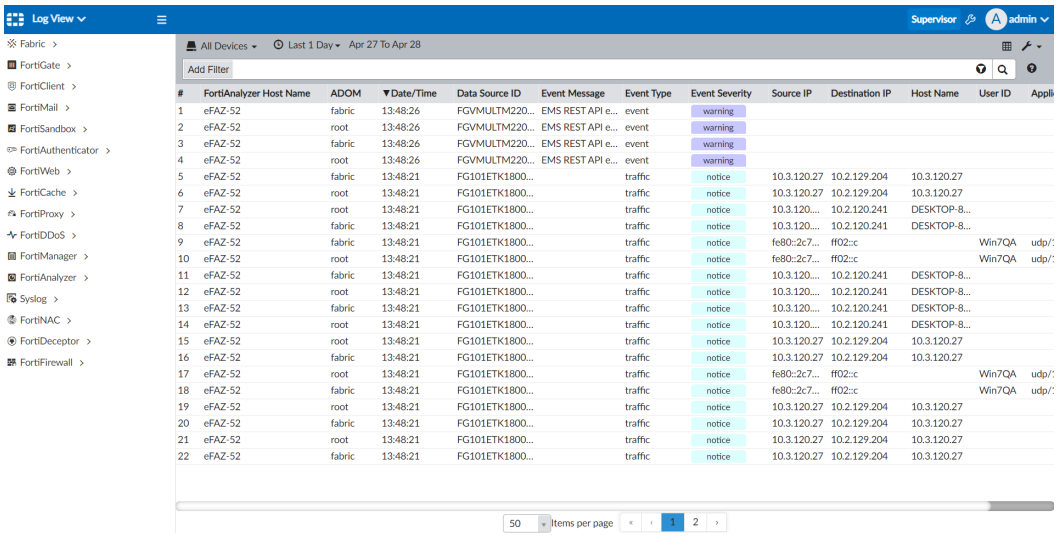
The *Log View* pane is added to the FortiAnalyzer Fabric supervisor.

This *Log View* supports a global search of logs collected across FortiAnalyzer Fabric members. The supervisor displays the same information about the logs as displayed in the FortiAnalyzer Fabric member that they were collected on.

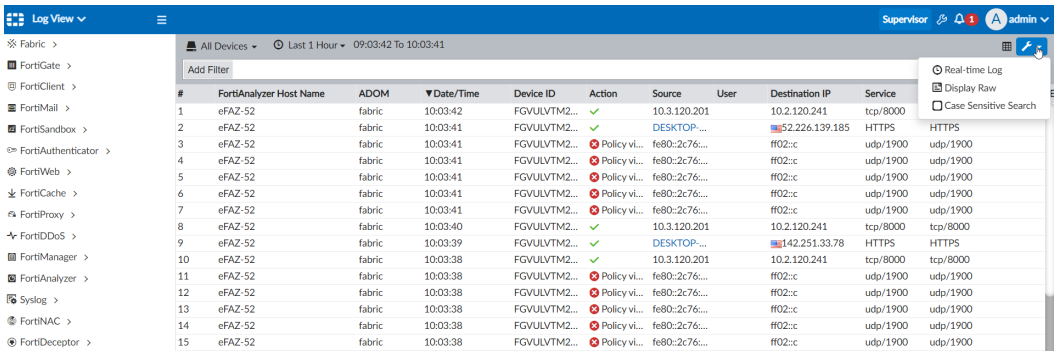


Two columns are added in the supervisor's *Log View* to identify where the logs were collected:

FortiAnalyzer Host Name	The host name for the FortiAnalyzer device that collected the log. To find or edit the *Host Name* for a FortiAnalyzer Fabric member, go to *System Settings* > *Dashboard* > *System Information* in the GUI for the member device.
ADOM	The ADOM that the log was generated in.

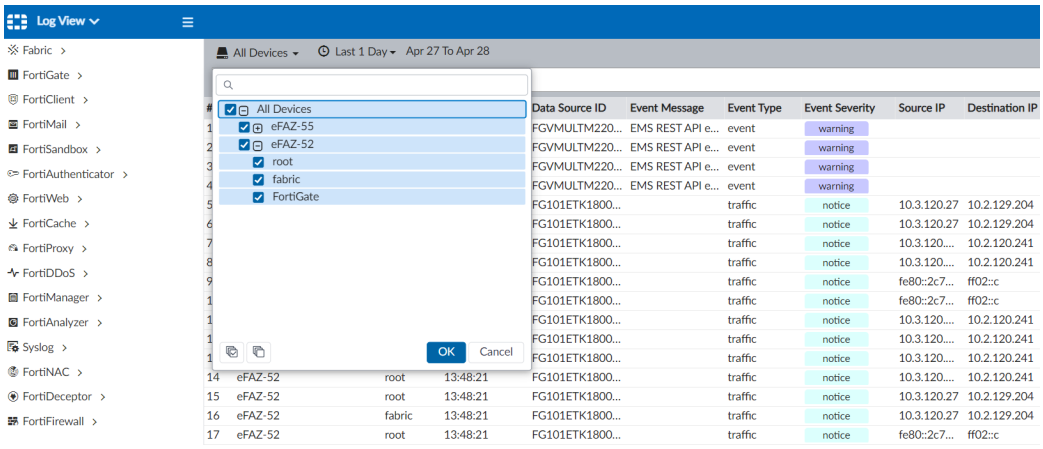


The *Log View* in a FortiAnalyzer Fabric supervisor does not support *Log Group*, *Log Browse*, *Log Downloads*, *Custom View*, or *Chart Builder*. These features are available in FortiAnalyzer Fabric members and regular FortiAnalyzer devices. For more information, see the FortiAnalyzer Administration Guide.

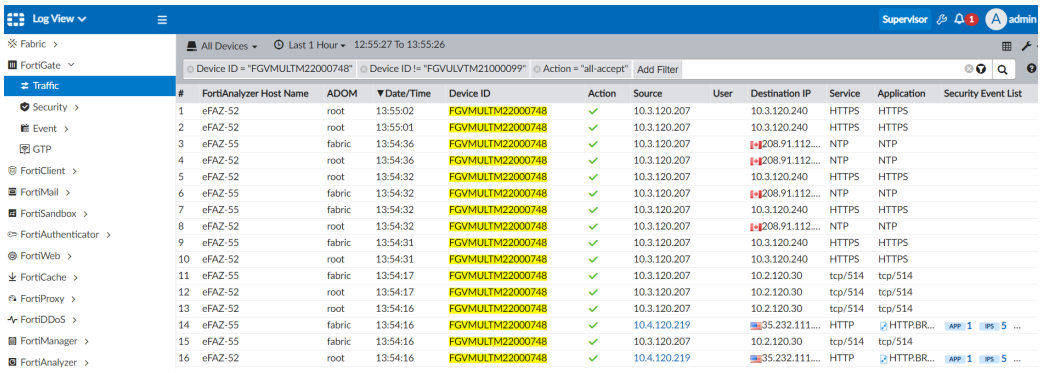


To use *Log View* in a FortiAnalyzer Fabric supervisor:

1. Confirm you are in the FortiAnalyzer Fabric supervisor.
2. Go to *Log View*.
3. From the *Device Filter* dropdown, select the FortiAnalyzer Fabric members and ADOMs to display logs from, and click *OK*.



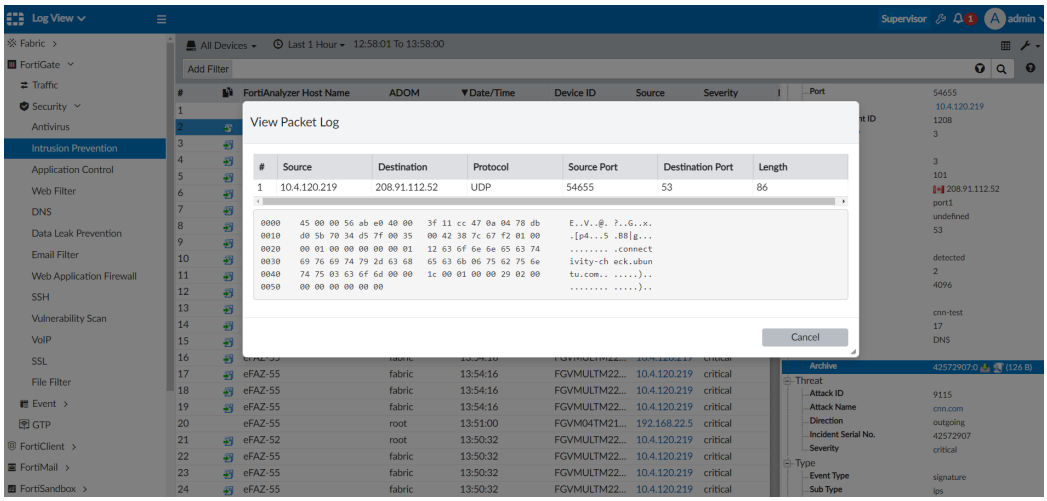
4. In the search bar, type the filters to apply to the table, and click the search icon.
   The search bar supports a global search across all FortiAnalyzer Fabric members. The *FortiAnalyzer Host Name* and *ADOM* columns display where the log was originally collected in the FortiAnalyzer Fabric.



To download FortiGate archive files for security logs from a FortiAnalyzer Fabric supervisor:

1. Confirm you are in the FortiAnalyzer Fabric supervisor.
2. Go to *Log View* > *FortiGate* > *Security* > *Intrusion Prevention*.
   In this example, the administrator downloads archive files for intrusion prevention. The same steps can be used from other log types available under *Log View* > *FortiGate* > *Security*.
3. Double-click the archive log to download.
   The log details pane displays.

4. In the *Archive* field, click the download icon.



Administrators

This section lists the new features added to FortiAnalyzer for administrators:

- Add French language support to GUI on page 101

Add French language support to GUI

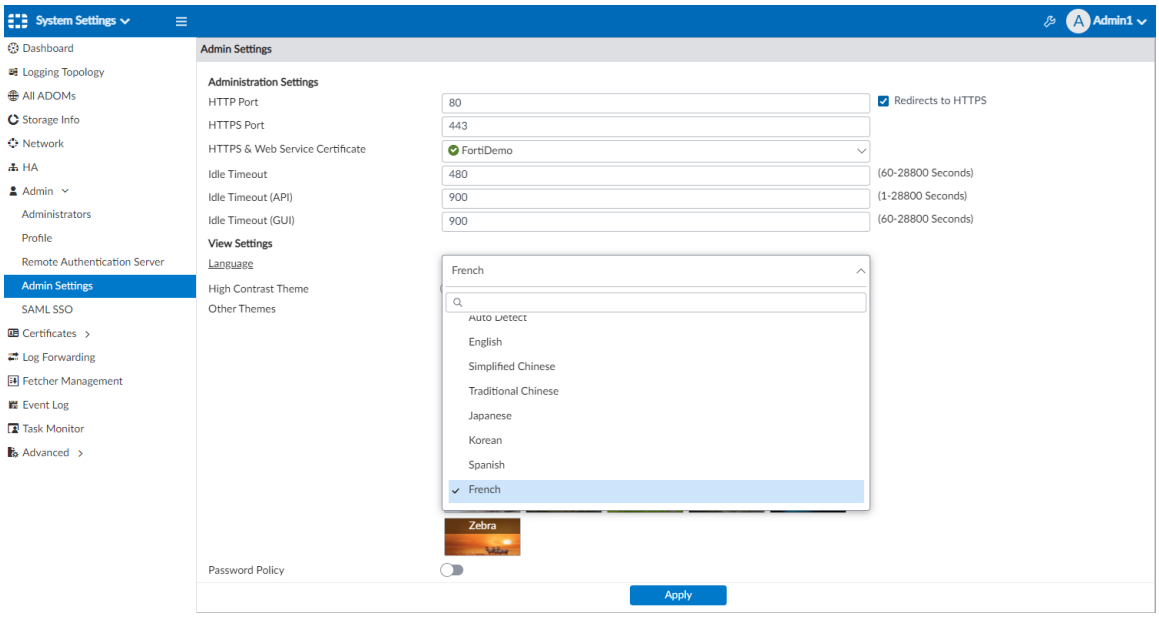
FortiAnalyzer GUI now supports French in addition to the previously supported languages.

By default, the GUI language is set to *Auto Detect*, which automatically uses the language set for the administrator's browser. If that language is not supported, the GUI defaults to English.

To set the GUI language to French:

1. Go to *System Settings* > *Admin* > *Admin Settings*.
2. From the *Language* dropdown, select *French*.

3. Click *Apply*.

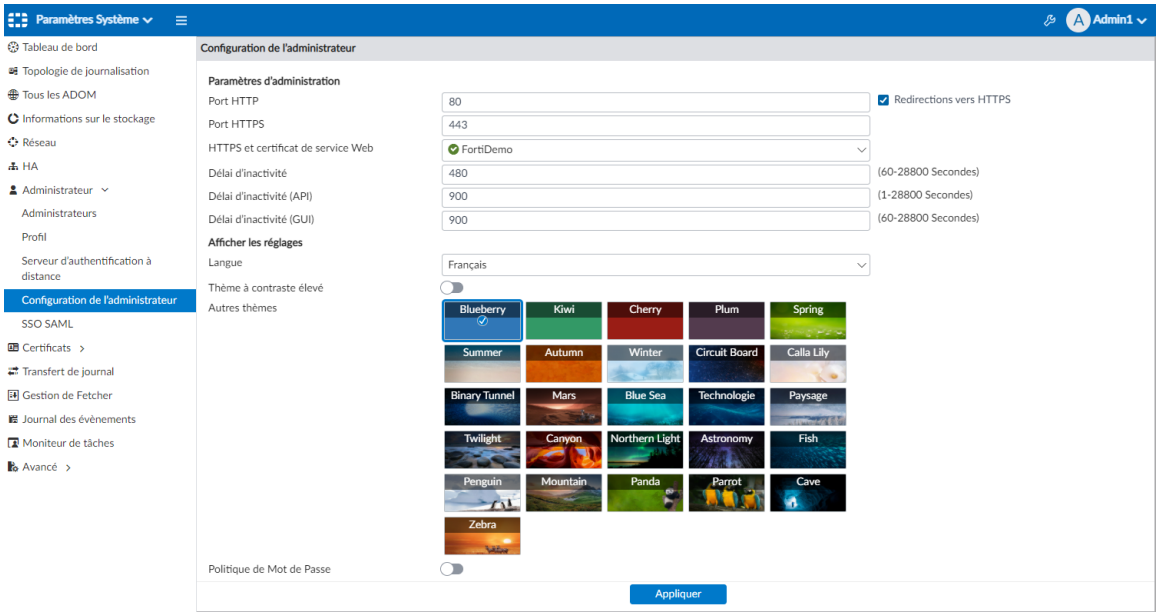


To set the GUI language to French from the CLI:

```
config system admin setting
   set webadmin_language french
end
```

This setting does not affect the CLI.

Below is an example of the French GUI:



Network

This section lists the new features added to FortiAnalyzer for networks:

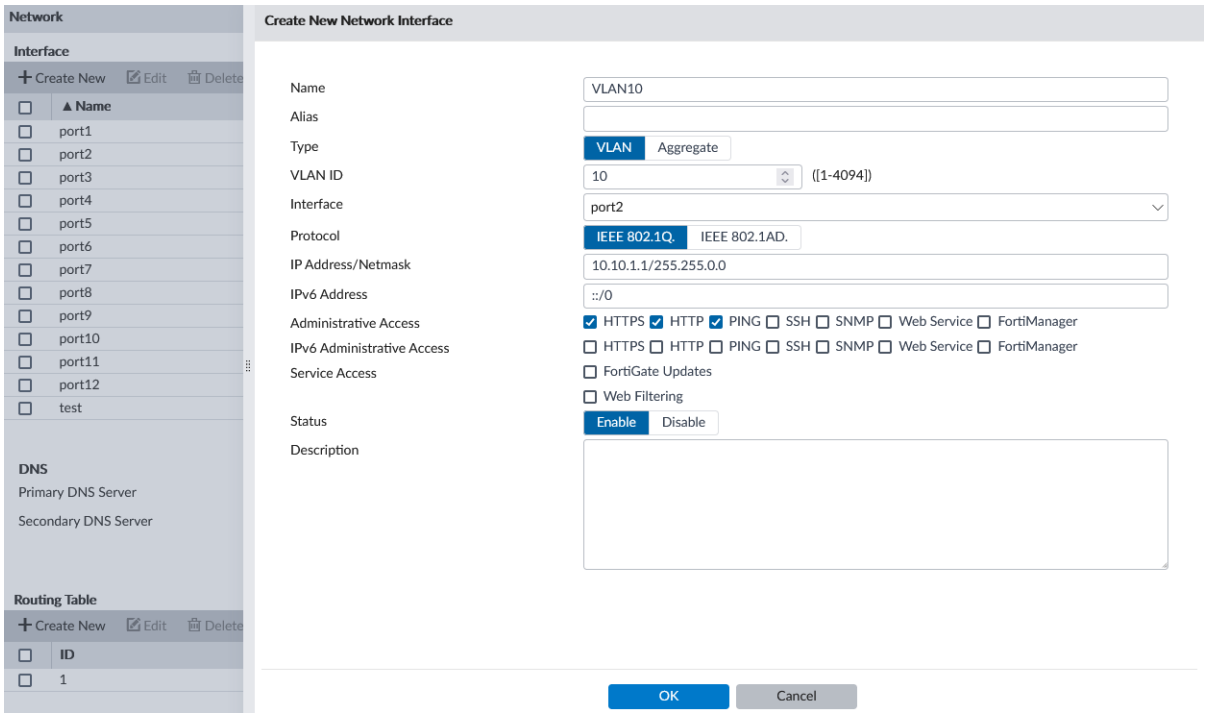
- FortiAnalyzer supports VLANs on physical network interfaces on page 103

FortiAnalyzer supports VLANs on physical network interfaces

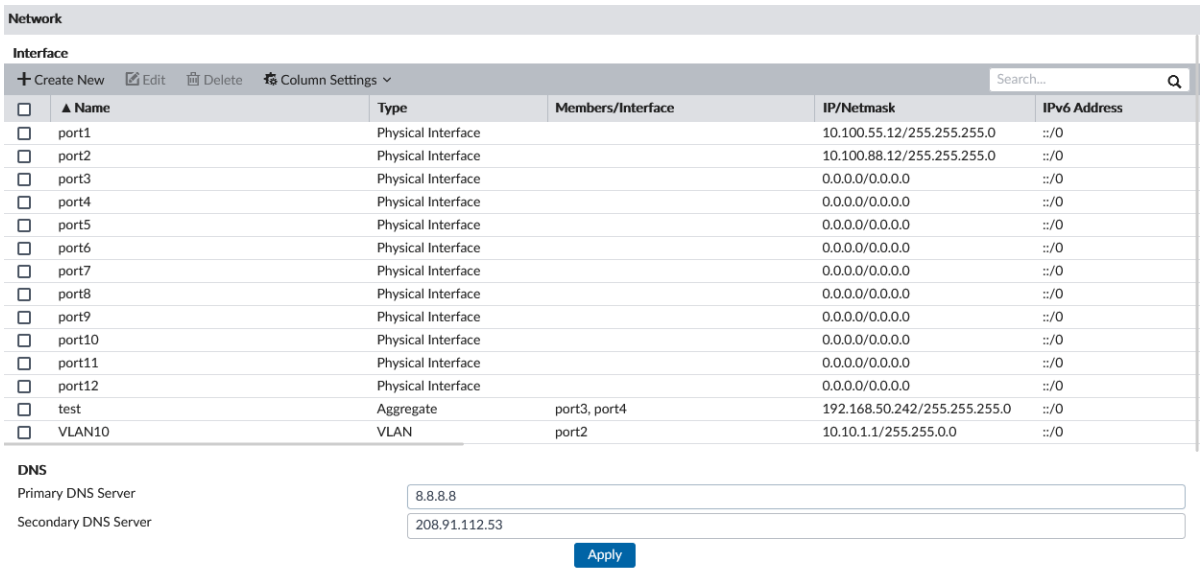
FortiAnalyzer supports VLANs on physical network interfaces.

To create a VLAN on FortiAnalyzer:

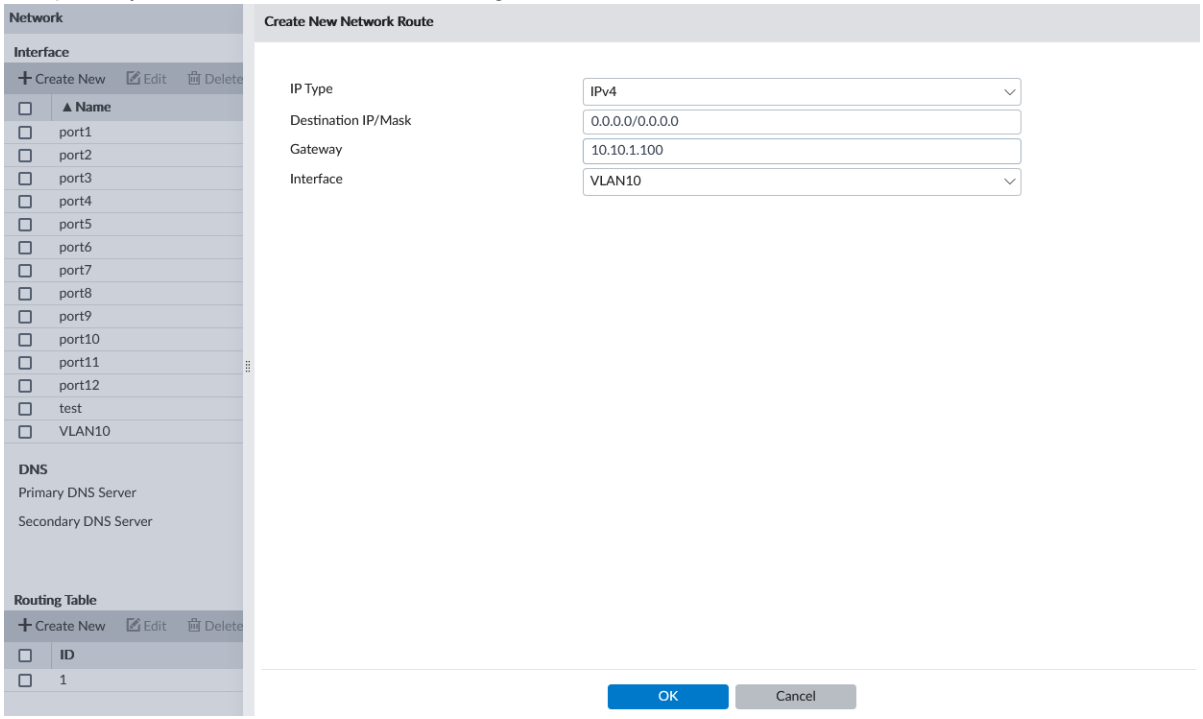
1. Go to *System Settings* > *Network*, and click *Create New* in the *Interface* table toolbar.
   The Create New Network Interface window opens.
2. Select VLAN as the interface type, and enter the VLAN name, VLAN ID, and the interface to which the VLAN is bound.



3. Click *OK* to save the VLAN.
   The VLAN is visible on the network page.



If required, you can create a static route using the VLAN interface.



To configure VLAN interfaces in the CLI:

1. Open the FortiAnalyzer CLI.
2. Enter the following commands.

```
config system interface
  edit <vlan-name>
    set type vlan
    set interface "portx"
    set vlanid <1-4094>
    set vlan-protocol <8021q/8021ad>
```

```
end
```

For example:

```
config system interface
   edit "vlan2"
      set ip 2.2.2.2 255.255.255.0
      set allowaccess ping https ssh
      set type vlan
      set interface "port2"
      set vlanid 2
      set vlan-protocol 8021q
end
```

Others

This section lists the new features added to FortiAnalyzer for other features relating to system settings:

- FortiAnalyzer Fabric usability improvements on page 105
- Add LLDP support on FMG and FAZ 7.2.1 on page 109
- Mandatory FortiCare/FortiCloud registration 7.2.1 on page 109

FortiAnalyzer Fabric usability improvements

System Settings > *FortiAnalyzer Fabric* is a new GUI to easily setup a FortiAnalyzer Fabric Cluster.

The supervisor node provides a centralized view for the whole cluster. Card style summary dashboards are available in the supervisor's *Device Manager*, and filters can be applied to those summary dashboards.

This topic includes:

- Configuring a FortiAnalyzer Fabric from the GUI on page 105
- Viewing member devices from the FortiAnalyzer Fabric supervisor on page 107

For more information about FortiAnalyzer Fabric, see the FortiAnalyzer Fabric Deployment Guide.

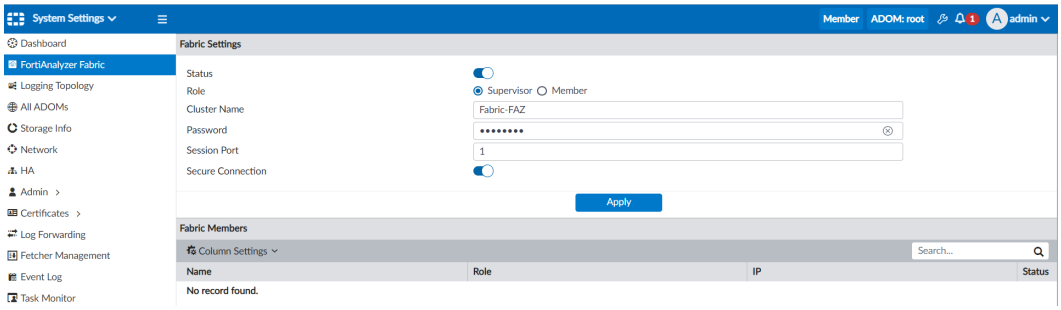
Configuring a FortiAnalyzer Fabric from the GUI

To configure a supervisor from the GUI:

1. Confirm you are in the GUI for the FortiAnalyzer that will be the supervisor.
2. Go to *System Settings* > *FortiAnalyzer Fabric*.
3. Set *Status* to *enabled*.

4. Configure the following settings for the supervisor, and then click *Apply* to save.

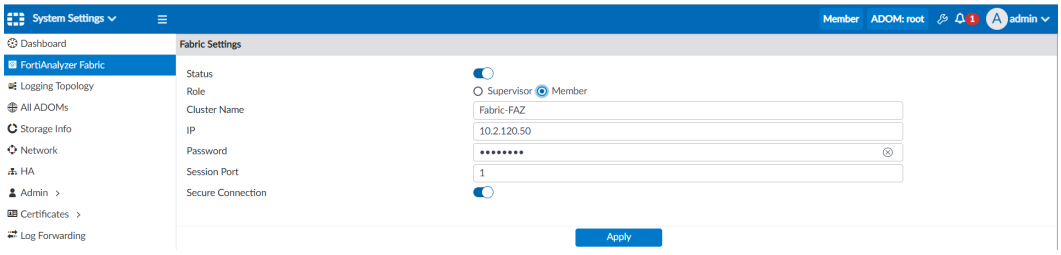
Role	Select *Supervisor*.
Cluster Name	Type a name for the FortiAnalyzer Fabric.
Password	Type a password for the FortiAnalyzer Fabric.
Session Port	Default = *6443*. Type the communication port if not using the default.
Secure Connection	Enable or disable secure connection.



To configure a member from the GUI:

1. Confirm you are in the GUI for the FortiAnalyzer that will be a member.
2. Go to *System Settings* > *FortiAnalyzer Fabric*.
3. Configure the following settings for the member, and then click *Apply* to save.

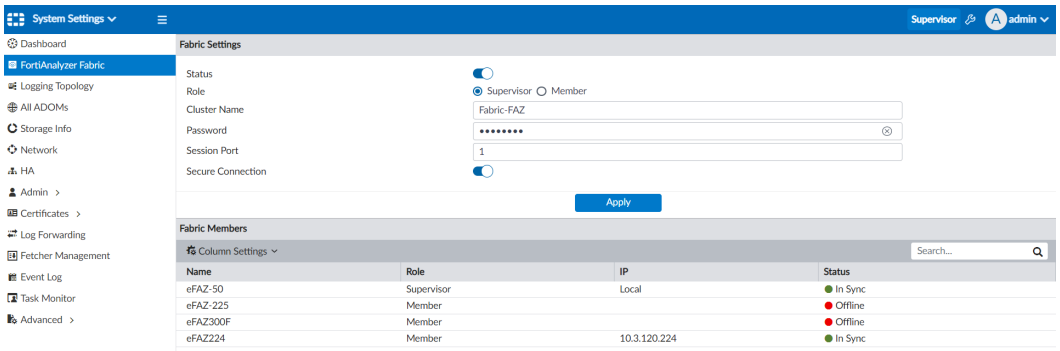
Role	Select *Member*.
Cluster Name	Type the name of the FortiAnalyzer Fabric.
IP	Type the IP of the supervisor for the FortiAnalyzer Fabric.
Password	Type the password configured for the FortiAnalyzer Fabric.
Session Port	Default = *6443*. Type the communication port if not using the default.
Secure Connection	Enable or disable secure connection.



To view the FortiAnalyzer Fabric from the supervisor:

1. Confirm you are in the GUI for the FortiAnalyzer Fabric supervisor.
2. Go to *System Settings* > *FortiAnalyzer Fabric*.
   Once the supervisor and members are connected and synchronized, the *Fabric Members* table includes the following information for each FortiAnalyzer in the FortiAnalyzer Fabric:

Name	The name of the FortiAnalyzer.
Role	The role of the FortiAnalyzer in the FortiAnalyzer Fabric (supervisor or member).
IP	The IP address of the FortiAnalyzer.
Status	The status of the FortiAnalyzer.

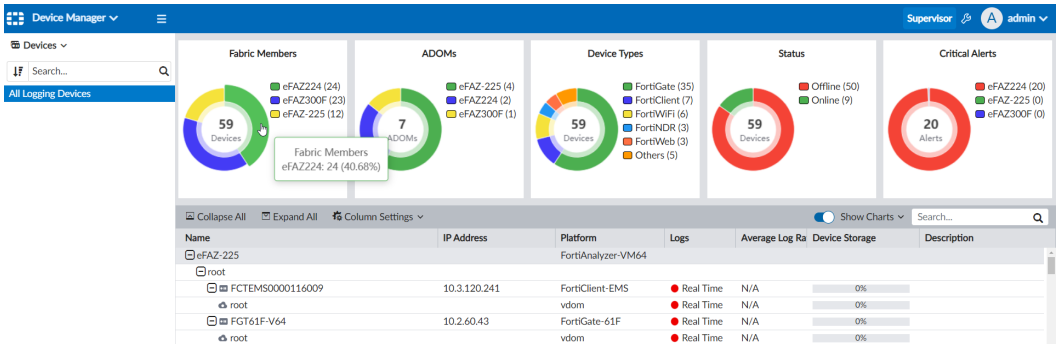


Viewing member devices from the FortiAnalyzer Fabric supervisor

To use the summary charts in Device Manager:

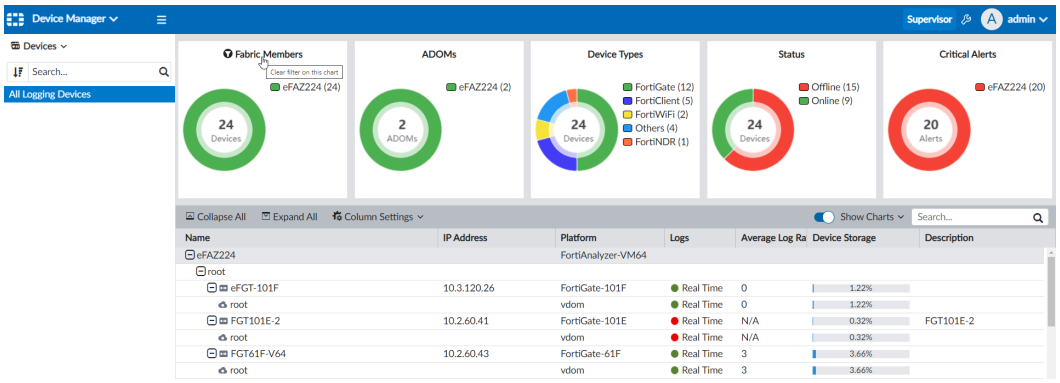
1. Confirm you are in the GUI for the FortiAnalyzer Fabric supervisor.
2. Go to *Device Manager*.
   Five summary charts are available:
   - *Fabric Members*
   - *ADOMs*
   - *Device Types*
   - *Status*
   - *Critical Alerts*

   By default, the *Show Charts* toggle is enabled. You can select which charts appear by selecting them in the *Show Charts* dropdown, or you can hide all the charts by disabling the *Show Charts* toggle.
3. Hover your cursor over the charts to see more information about the data in a tooltip.



4. Click an area on a chart or in its legend to filter *Device Manager* by that information.
   You can click multiple charts and legends to apply multiple filters. A filter icon appears next to the chart title when it is being used to filter the *Device Manager*.

5. To remove the filters, click the title of the charts that were used.



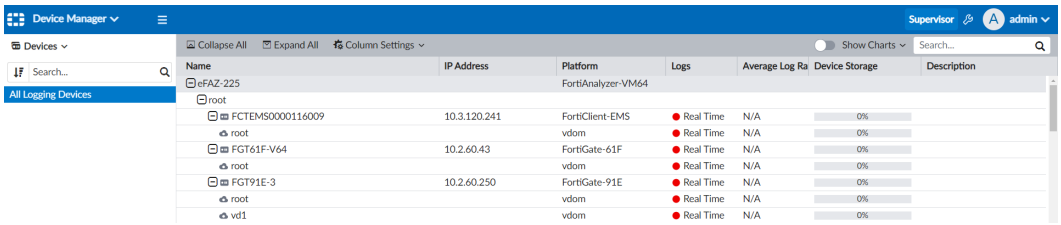
To use the table in Device Manager:

1. Confirm you are in the GUI for the FortiAnalyzer Fabric supervisor.
2. Go to *Device Manager*.
   The table in the *Device Manager* provides the following information about each FortiAnalyzer Fabric member:

Name	The name of the FortiAnalyzer Fabric member.
Platform	The device's platform.

3. Click *Expand All*.
   FortiAnalyzer Fabric member ADOMs are displayed below each member. Each ADOM includes their authorized logging devices. The following information is displayed for each device and VDOM in the table:

Name	The name of the device.
IP Address	The IP address of the device.
Platform	The platform of the device.
Logs	The real time log status. A green circle indicates that logs are being sent. A red circle indicates that logs are not being sent. The status indicator will turn from green to red when logs have not been sent for 15 minutes or longer.
Average Log Rate (Logs/Sec)	The average log rate per second. This information is only available when the device is sending logs in real time.
Device Storage	The amount of storage used by the device or VDOM.



Add LLDP support on FMG and FAZ - 7.2.1

Using the CLI, the link layer discovery protocol (LLDP) feature can be enabled on FortiAnalyzer ports to advertise the device identity and make it discoverable by other devices on the local network segment. After enabling the LLDP feature on a port, the port sends LLDP packets every 30 seconds.

The LLDP feature is set to `disable` by default.

To enable the LLDP feature:

1. In the CLI, enter the following command:

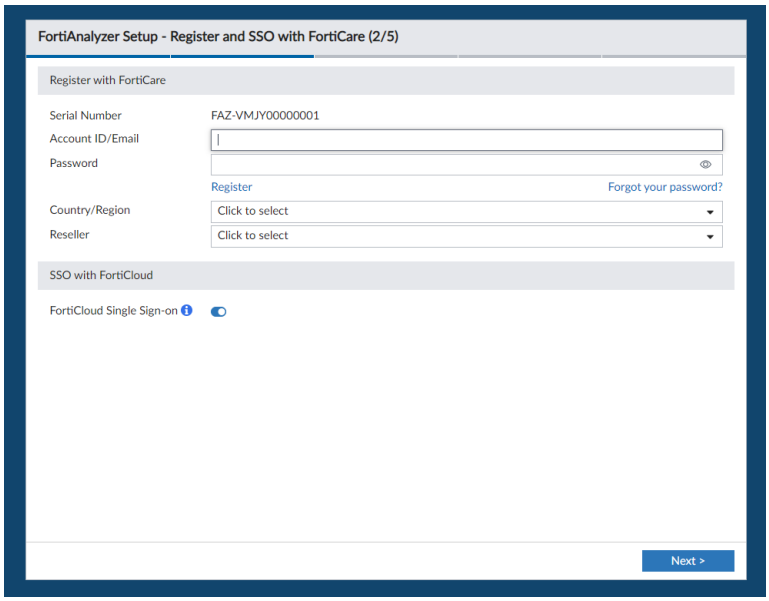
```
config system interface
   edit port1
      set lldp enable
   next
end
```

Mandatory FortiCare/FortiCloud registration - 7.2.1

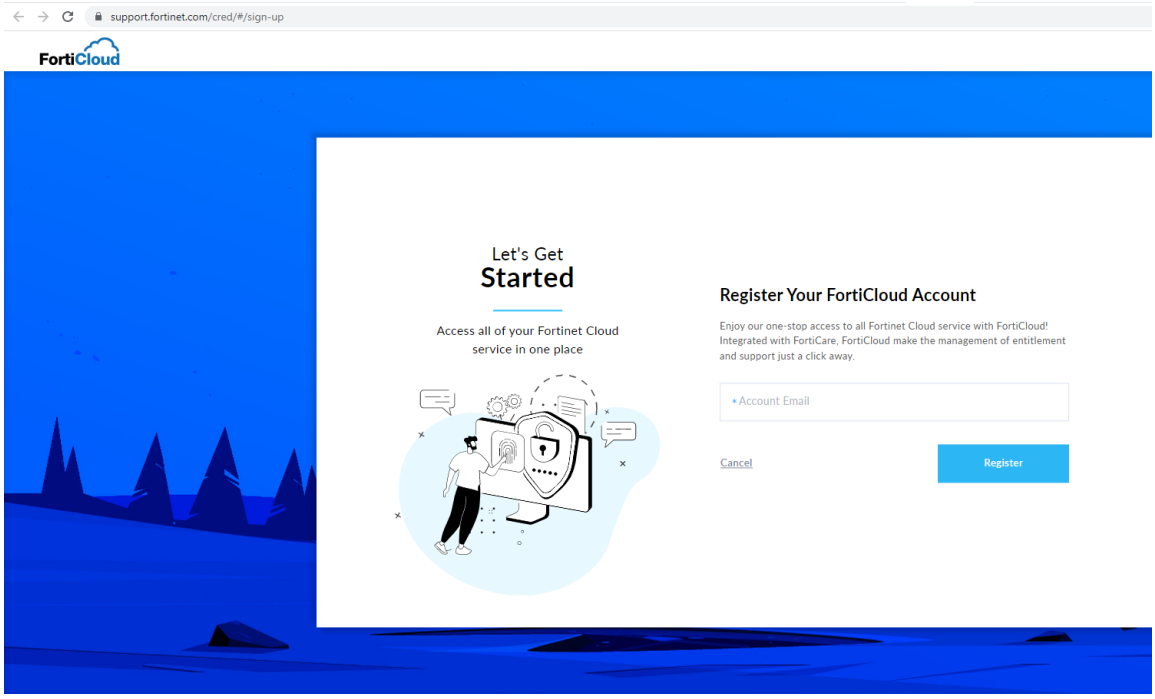
Starting in FortiAnalyzer v7.2.1, the administrator must complete the registration process via FortiCare/FortiCloud to use the FortiAnalyzer unit.

To complete the mandatory FortiCare registration:

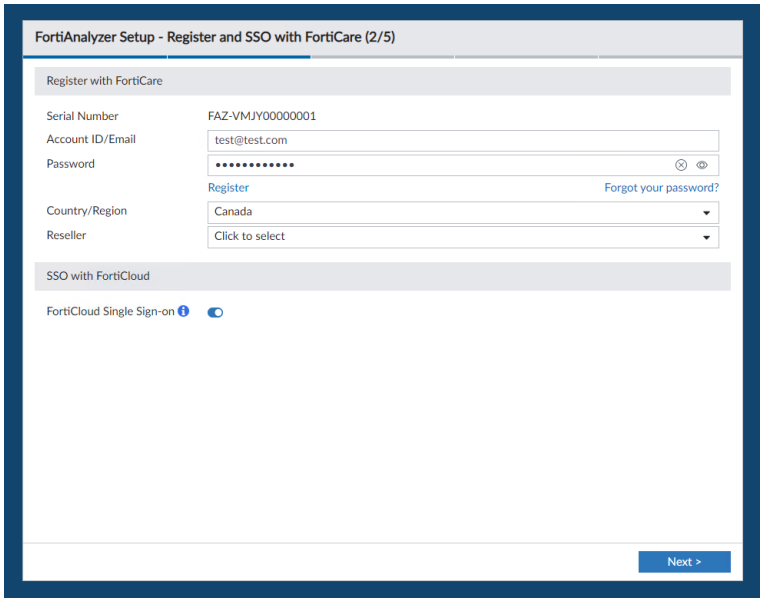
1. Log into the GUI for the new FortiAnalyzer hardware or virtual device.
   The *FortiAnalyzer Setup* wizard displays.
2. Click *Begin* to continue to the *Register and SSO with FortiCare* step.



3. Click *Register*.
   The FortiCare website opens, prompting you to register the FortiAnalyzer device.



4. After completing the registration, fill in the required information in the GUI.



5. Click *Next* and complete the remaining steps in the *FortiAnalyzer Setup* wizard.
   The next time the admin logs in, the *Register and SSO with FortiCare* step will no longer be required.

Cloud Services

This section lists the new features added to FortiAnalyzer for cloud services:

- FortiAnalyzer management from FortiGate Cloud 7.2.1 on page 111
- VM flexible shapes support for Oracle Cloud Infrastructure 7.2.1 on page 113
- FortiAnalyzer-VM has been added to the Flex-VM offering 7.2.2 on page 115
- FortiAnalyzer-VM supported in OCI DRCC 7.2.2 on page 116

FortiAnalyzer management from FortiGate Cloud - 7.2.1

FortiAnalyzer can now be managed from the FortiGate Cloud.

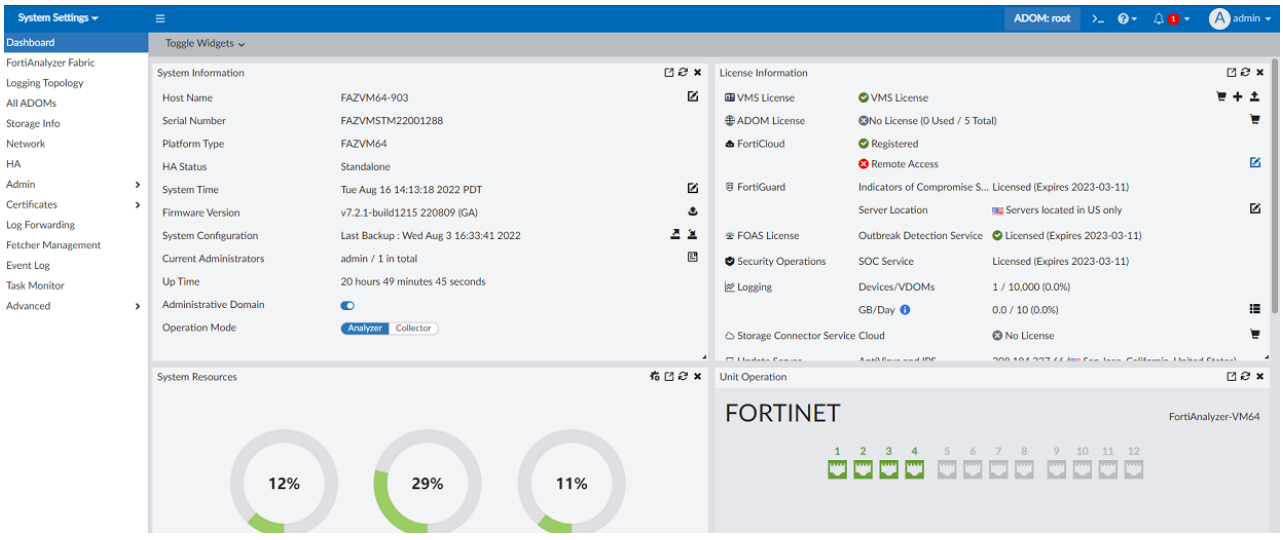
Your FortiAnalyzer device must be registered with FortiCloud.

You cannot enable remote access from FortiCloud if the FortiAnalyzer is managed by a FortiManager. You must disable the management before enabling remote access.

For a FortiAnalyzer high availabiliy (HA) cluster, each member should independently register to FortiCloud. However, only the primary unit can enable remote access from FortiCloud.

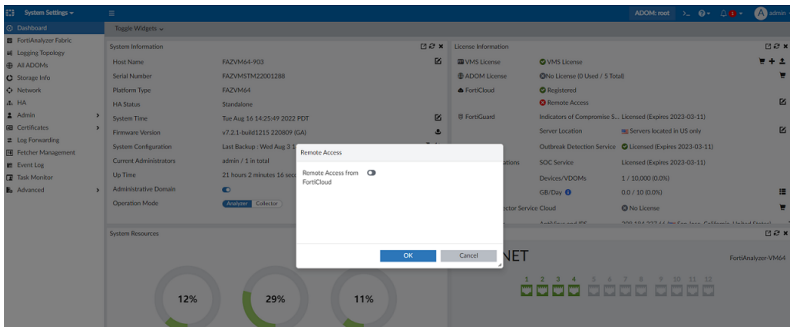
To enable remote access from FortiCloud using the GUI:

1. Go to *System Settings* > *Dashboard*.
2. In the *License Information* widget, click the edit icon for *Remote Access*.

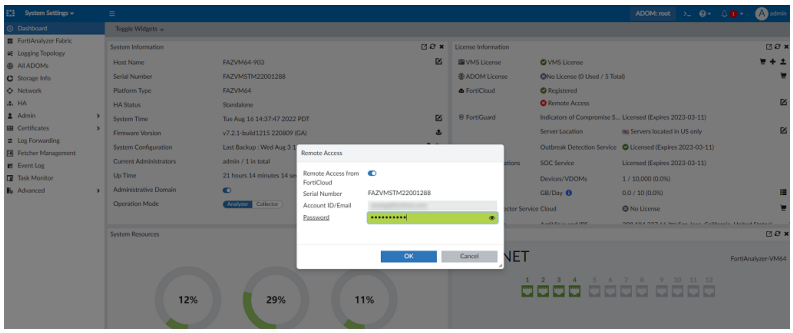


The *Remote Access* dialog opens.

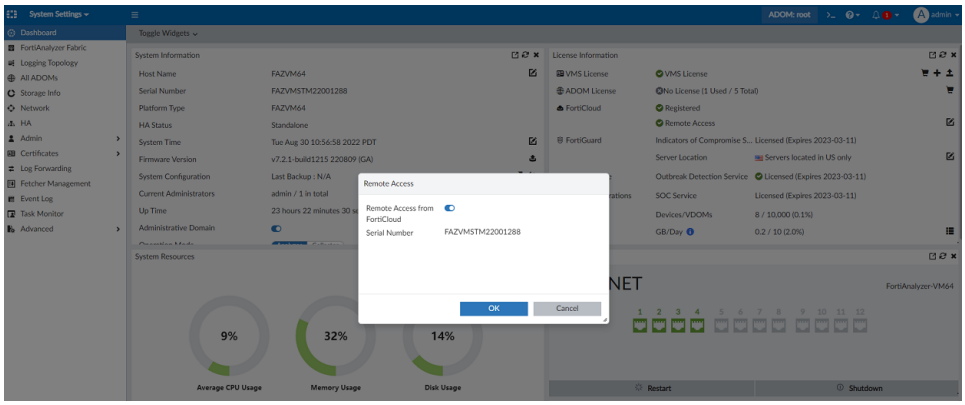
3. Enable *Remote Access from FortiCloud*.



4. In the *Password* field, enter the FortiCloud password.
   The *Serial Number* and FortiCloud *Account ID/Email* are automatically populated.
5. Click *OK*.



After the login is successful, *Remote Access from FortiCloud* displays as enabled.

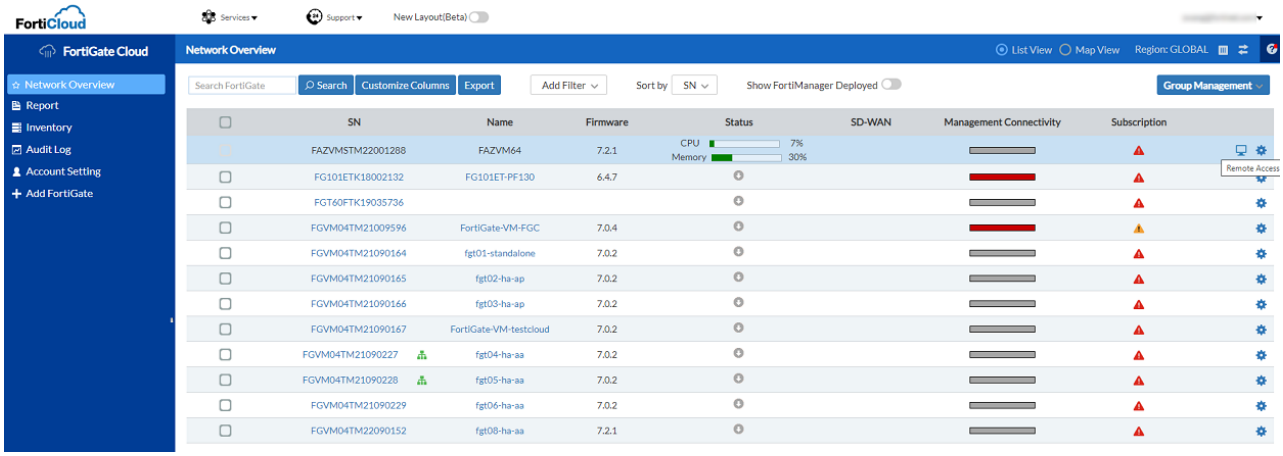


To enable remote access from FortiCloud using the CLI:

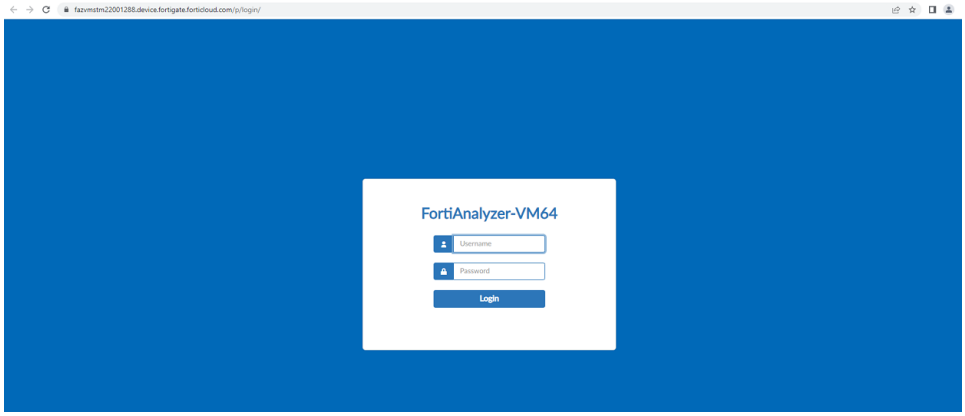
1. In the FortiAnalyzer CLI, enter the following command:
```
config system central-management
   set type fortigatecloud
end
```
2. In the FortiAnalyzer CLI, enter the following command:
```
execute cloud-remote-access login <account-id> <password>
```

To use remote access from FortiCloud:

1. Log in to FortiCloud.
2. Go to *Network Overview*.
3. In the row for the enabled FortiAnalyzer device, click the *Remote Access* icon.



The login page for the FortiAnalyzer displays.



VM flexible shapes support for Oracle Cloud Infrastructure - 7.2.1

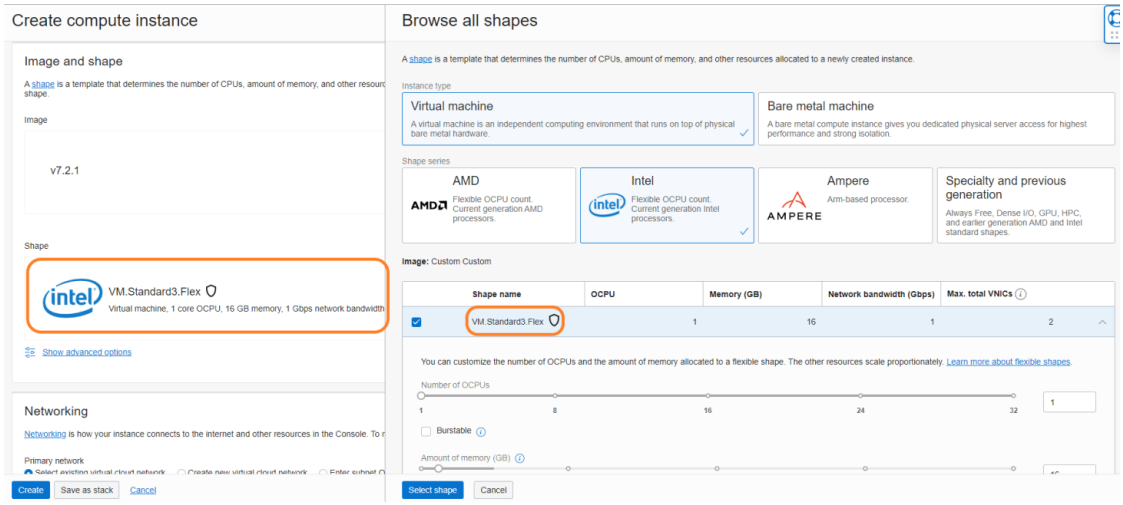
The VM flexible shapes now supported for Oracle Cloud Infrastructure (OCI) permit customization for OCPU and memory resources.

When you create a VM instance using a flexible shape, you can select the number of OCPUs and the amount of memory that you need for the workloads that run on the instance. The network bandwidth and number of VNICs scale proportionately with the number of OCPUs.

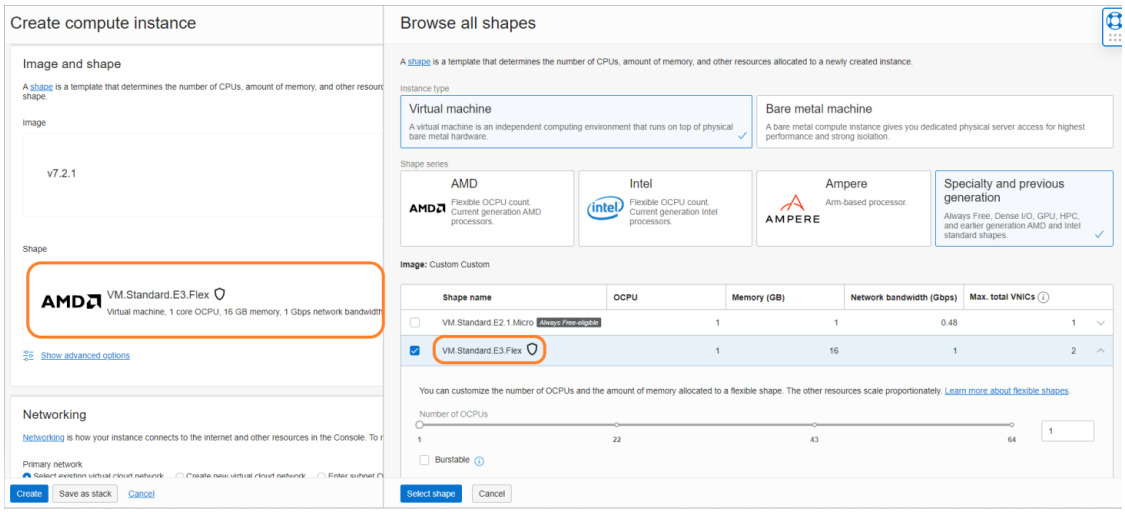
For more information about instance type support, see the FortiAnalyzer OCI Administration Guide.

When creating a FortiManager-VM or FortiAnalyzer-VM instance in OCI, you can select one of the following flexible shapes:

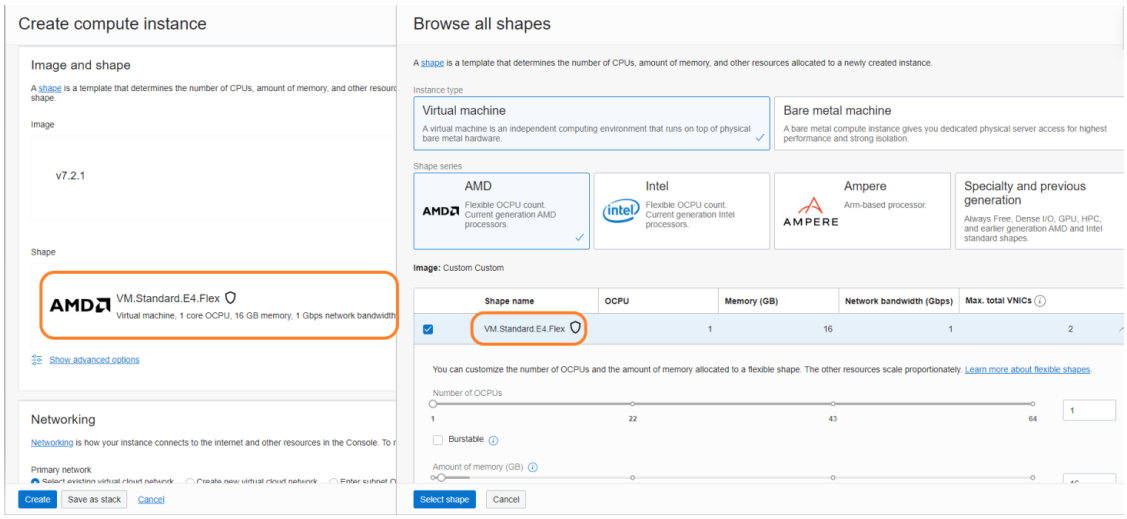
- VM.Standard3.Flex (Intel)



- VM.Standard.E3.Flex (AMD)



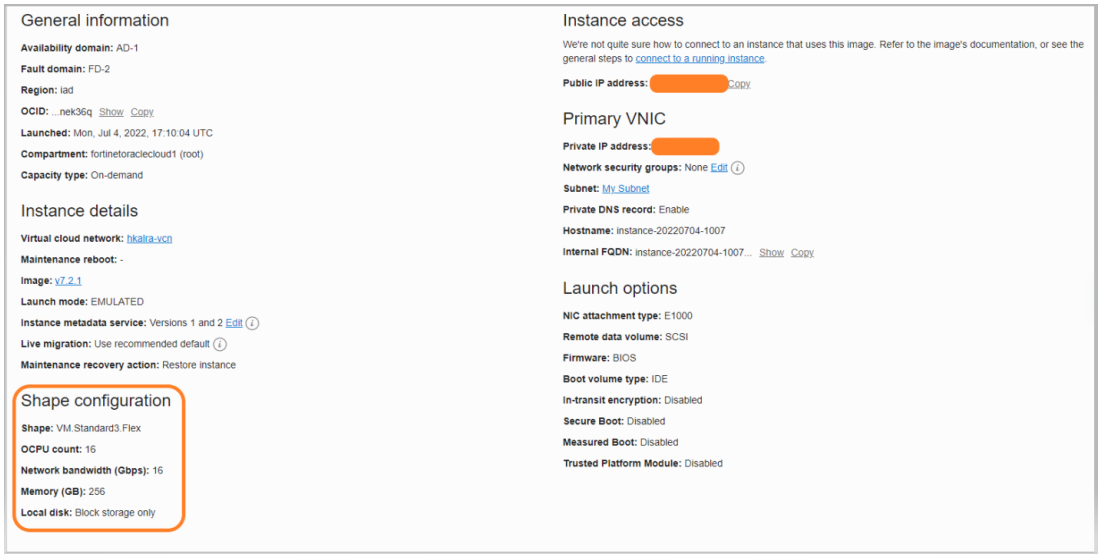
- VM.Standard.E4.Flex (AMD)



When creating an instance with a flexible shape, you can use the horizontal scrolls to customize the *Number of OCPUs* and the *Amount of memory (GB)*.

VM BYOL licenses are based on vCPUs. The minimum vCPU support for FortiManager-VM and FortiAnalyzer-VM is 4. 1 OCPU equates to 2 vCPUs. Ensure that you meet the requirements for your license.

Once the instance is created, you can check the instance shape from the dashboard as well. For example, see the dashboard for a VM.Standard3.Flex (Intel) shape below.



With this flexible shape, you can customize the number of OCPUs and the amount of memory when launching or resizing your VM.

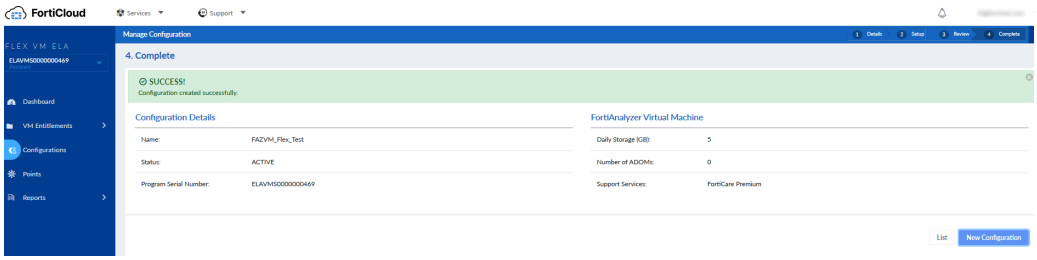
FortiAnalyzer-VM has been added to the Flex-VM offering - 7.2.2

FortiAnalyzer-VM has been added to the Flex-VM offering. This allows you to scale the daily storage and number of ADOMs according to your need.

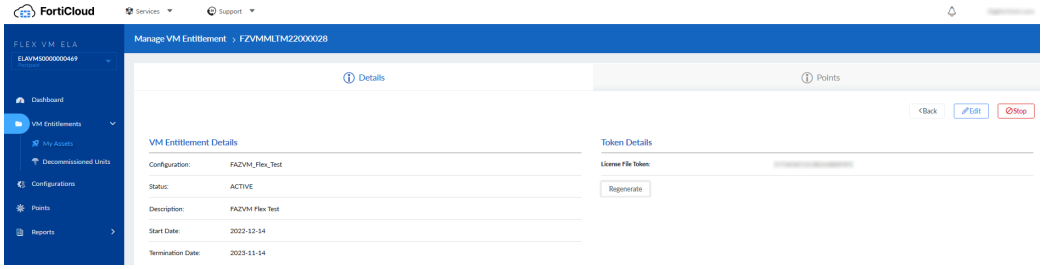
For additional information, see the Flex-VM Administration Guide on the Fortinet Documents library.

To activate the Flex-VM token:

1. In Flex-VM, configure the FortiAnalyzer Flex-VM device, including the daily storage and number of ADOMs.



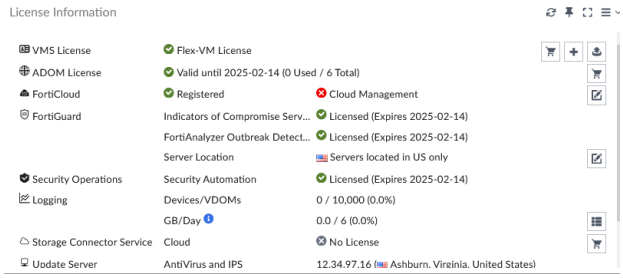
2. In Flex-VM, add a VM entitlement to get a license file token.



3. Using the FortiAnalyzer Flex-VM token, enter the following command in the FortiAnalyzer CLI to activate the license:

```
execute vm-license <license-token>
```

4. FortiAnalyzer will retrieve the license from Flex-VM, including the daily storage and number of ADOMs.



FortiAnalyzer-VM supported in OCI DRCC - 7.2.2

As of FortiAnalyzer 7.2.2, FortiAnalyzer-VM is supported in OCI Dedicated Region Cloud@Customer (DRCC). For more information, see the FortiAnalyzer OCI Administration Guide.

Index

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